

tions to facilitate general instruction," "the dissemination of truth and knowledge among all the ranks of men." Although Stewart did not elaborate on the kind of education he envisioned or how it would differ from the church-sponsored schooling typically available in Britain in the first decades of the nineteenth century, he clearly recognized that, in the wake of the revolution caused by printing and if God's design was to be advanced by philosophical inquiry, some mechanism had to be devised to disseminate the "extensive experience" of humankind to a population literate in ever greater numbers. As we will see in the last section of this chapter, by 1825 it became possible to imagine not only that the philosophical problem of induction and the social problem of education were inextricably linked but also that the former could be solved by making political economy the keystone of everyone's education. Before taking up J. R. McCulloch's attempt to address the problem of induction with a solution that involved professionalizing political economy, however, let us return to the subject of numbers, so we can see how the kind of theoretical fact that Stewart liberated from observed particulars was sutured again to the numerial things of the world.

THOMAS MALTHUS AND THE REVALUATION OF NUMERICAL REPRESENTATION

Given political economy's disciplinary roots in moral philosophy, as well as the strong providentialism that characterized Stewart's influential treatment of the science, it initially seems incomprehensible that to many nineteenth-century Britons political economy came to represent the most dismal tendencies of systematic knowledge. For the most part, modern historians have not helped us understand—or even see—this conundrum, for with a few notable exceptions they have tended to read political economy either as a harbinger of modern economics or simply as the eighteenth-century antithesis of more humane discourses like the novel.¹⁶ Viewed from the perspective of eighteenth-century moral philosophy instead of twentieth-century economics, however, early nineteenth-century political economy looks not like an immature effort to determine the regularities of production and consumption but like an attempt to accommodate the laws by which wealth was assumed to accumulate according to God's providential plan. If not fully devoted to moralizing the accumulation of wealth, in the sense of inculcating Christian virtues in manufacturers and capitalists, many of Stewart's disciples—who were the earliest champions of political economy in Britain—were nevertheless devoted to understanding how the happiness that wealth (supposedly) conferred upon societies contributed to the aggregate virtue of the nation.

Despite Stewart's strong and influential providentialism, however, it is un-

deniable that contemporary critics of political economy targeted precisely the science's indifference to moral issues in their vicious attacks on what Carlyle dubbed the dismal science. To understand why political economy was vilified in this way, it is necessary to take up the case of Thomas Malthus, whose version of political economy was so influential that "Malthusianism" became the most common invective hurled against the science of wealth. To understand why Malthus provoked such a turn in the popular (mis)understanding of political economy, moreover, it is helpful to examine his treatment of numbers in more detail than most readers have done. Malthus was by no means solely responsible for the revaluation of numerical representation that became visible in Britain after the 1790s. But the way a vision of natural laws more bleak than any but the most embittered philosopher had been willing to voice intersected in his work with a use of numbers apparently purged of their Christian Platonism contributed to the impression that numbers had no moral dimension. It seemed, as Dickens so bitterly complained, that matters of the utmost moral importance could be treated as "a case of simple arithmetic."¹⁷

To understand Malthus's complex relation to the revaluation of numerical data, we need to pose several questions, most of which do not admit easy answers. One line of inquiry must address the kinds of numerical data available in the last decades of the eighteenth century and the social authority assigned to these numbers. This will lead us to restate and expand the questions about counting I raised in the first chapter of this book: Who counted? What did people count? For what social or institutional purposes did people count? And with what instruments and funding were large-scale counting projects implemented? A second line of inquiry concerns the meanings and relative importance assigned to numerical data. As we will see, language that cast assessments of "value" and national well-being in what looked like quantifiable terms was used throughout the eighteenth century, but advocates of theological utilitarianism did *not* typically call for the collection of numerical data to determine *what* behaviors would contribute most to what William Paley called "the greatest sum of human happiness." Indeed, even when Jeremy Bentham began to advocate an empirical variant of utilitarianism in the last decades of the century, he did not wait for data before deciding what policies to recommend. To do Bentham justice, however, he did have a passion for numerical information and, frustrated by its unavailability, recommended establishing (or reforming) the centralized agencies that would have made collecting such data possible.¹⁸ The important point is that until the turn of the century, most government officials and individual philanthropists did not consider it necessary to base philosophical principles on numerical data, much less to ask about "values" or "happiness" in terms that would admit of numerical answers.

By 1825 this situation had just begun to change. Although I will delay my

discussion of this change until the final section of this chapter, let me pose the question this line of inquiry evokes in its starkest terms: How and why did happeness and value come to be understood as concepts that could be quantified (and by extension commodified)? How and in what arenas, in other words, did what I have called gestural mathematics give way to literal counting, so that “value,” “worth,” and “riches”—not to mention “sum,” “calculation,” and “calculus”—gradually abandoned their older ethical and theological connotations for a rationality designed to adapt means to ends and to quantify productivity and yield?

The questions about counting may never be answerable to our complete satisfaction. Only a few scholars have tackled subjects related to the history of numerical representation in eighteenth-century Britain, and even those who have done so have found it almost impossible to assemble evidence. Moreover, any answer we give must remain partial because the determinants of this semantic revolution are so numerous and diverse. What follows, then, should be read as a barometer of the current state of scholarship and a prolegomenon to further research. Even if my observations are incomplete, however, approaching Malthus's much-interpreted *Essay* along these lines will help us to see why its many incarnations constitute a crux in the history of the modern fact and to understand how the form of representation that late twentieth-century readers associate with disinterestedness or impartiality acquired those connotations partly through Malthus's revision of the modern science of wealth.

Several kinds of numerical records were routinely kept in Britain during the eighteenth century. In addition to the government's excise and trade records, companies as well as many individuals kept records of business or household costs, purchases, and sales; parishes recorded expenditures on the poor; magistrates kept track of criminal arrests and the debts incurred by prison inmates. Beyond such representations of daily, monthly, or annual activities (which make these records resemble the accountant's memorial and serve the same function), another kind of numerical document was regularly produced in eighteenth-century Britain: bills of mortality, which served as the basis for life tables and thus for pricing insurance. William Petty either wrote or promoted a very early interpretation of the bills of mortality in 1662; in 1694 Edmund Halley constructed a life table from the births and deaths recorded in the German city of Breslau; and in 1772 William Price used records kept by All Saints parish in Northampton to construct a new life table.¹⁹

As important as these numerical records were, from a modern perspective their limitations are even more striking than their extent. The first feature to note about all these records (with the exception of excise and trade figures) is their localism. In keeping with the structure of parish administration, which

characterized Britain in the period, records of expenditures on poor relief were kept at the parish level. Even these were collected erratically, however: returns from parishes were made only for the years 1748–50, 1776, and 1783–85.²⁰ Not until 1775 was a parliamentary committee appointed to collect figures for the nation as a whole, and in 1796 such information was still so incomplete that when a private philanthropic society wanted to help remedy the condition of the poor, its members had to make collecting such information one of their charter projects.²¹ Bills of mortality were also, of necessity, kept at the local level, and even those who consulted the bills to generate life tables for general use were uncertain whether these bills really provided generalizable information; before the kind of localized but large-scale information that Edwin Chadwick collected in the 1840s was available, it was not clear whether life expectancy varied with where one lived, much less whether location should influence the price of insurance. Even more striking from a modern perspective are the kinds of records about commercial enterprises that were not kept in eighteenth-century Britain. Records about bankruptcies were scanty and imprecise before the establishment of a bankruptcy court in 1831, for example, and although sophisticated new methods of accounting had been developed, even as innovative a businessman as Josiah Wedgwood did not consider it worthwhile to collect the kind of information that would have made cost accounting possible.²² The relative indifference to modern modes of accounting among eighteenth-century tradesmen helps explain why the history of accounting is less relevant to the vicissitudes of the modern fact in eighteenth-century Britain than is the history of moral philosophy.

To a certain extent, the relative scarcity of numerical information in this period points to the lack of an infrastructure sufficiently developed or centralized to collect it. The parish system of administration certainly tended to impede the collection of national figures, and in the absence of a centralized body of law that expressly promoted business, it may have seemed wise to avoid providing tax collectors with the kind of records that a money-starved government might seize. Such an explanation goes only so far, however, for the very parish system that might be seen as having impeded national information collection was successfully used in the 1790s to implement the first such project, which culminated in the publication of Sir John Sinclair's twenty-one-volume *Statistical Account of Scotland*.²³ By the same token, even if national laws did not systematically protect private enterprise from taxation, since no laws specifically required businesses to hand over their books to government representatives, entrepreneurs might well have used regular accounts to increase their profits without worrying about undue oversight or taxation.

Instead of simply attributing the relative lack of numerical records to an in-

adequate infrastructure, we should recognize that many Britons did not consider counting particularly relevant to knowledge or see costing as essential to value. Beyond overt resistance to counting, standardization, and a national census, which has been well documented in the scholarly literature,²⁴ eighteenth-century Britons also manifested a pervasive indifference to numerical information, which seemed irrelevant to what many people recognized as “truth” or “value.” The natural philosophical developments I have already discussed tended to subordinate observed particulars (which could be counted) to universals (which could not), and Britons also tended to neglect counting because the “truths” that most associated with “value” were ethical or even theological. Insofar as the “value” of some action could be measured, “measurement” had less to do with quantification than with determining the “fit” between the action and God’s laws.

We have already seen that Shaftesbury and Hutcheson used a mathematical vocabulary to discuss ethical issues. Examples of a mathematized conception of virtue can certainly be found earlier, especially in Puritan literature (in 1627, for example, Richard Cumberland advocated determining “the greatest Good” by “the fittest natural Measure”),²⁵ but the tendency to discuss virtue in mathematical terms reached its apogee in the eighteenth-century movement known as theological utilitarianism.²⁶ Beginning in 1731 with John Gay’s *Dissertation concerning the Fundamental Principles of Virtue and Morality* and achieving its most influential articulation in William Paley’s *Principles of Moral and Political Philosophy* (1785), theological utilitarianism generally sought to identify the greatest “common good” by a “felicific calculus.” An Anglican outgrowth of the tradition of natural jurisprudence associated with Hugo Grotius and Samuel von Pufendorf, theological utilitarianism deployed what I have called gestural mathematics to assess how well phenomena “fitted” the providential design that (theoretically) informed the natural and moral worlds. As William Paley explained:

The fitness of things means their fitness to produce happiness: the nature of things means that actual constitution of the world, by which some things . . . produce happiness, and others misery: reason is the principle, by which we discover or judge of this constitution: truth is this judgment expressed or drawn out into propositions. So that it necessarily comes to pass, that what promotes the public happiness, or the happiness of the whole, is agreeable to the fitness of things, to nature, to reason, and to truth.²⁷

As numerous modern historians have noted, Thomas Malthus belongs to the tradition of theological utilitarianism.²⁸ What few have noticed, however, is that when Malthus supplemented the largely deductive assertions that char-

acterize the first edition of his *Essay on the Principle of Population* with the numbers that swelled all subsequent editions, he all but gutted the strain of theological utilitarianism that had underwritten the first edition and that had conferred upon numbers (though not on counting) the overtones of Christian Platonism that we saw in Shaftesbury’s work. This was true not simply because Malthus substituted induction, which could (but did not always) promote counting, for deduction (which resembled mathematics, not counting). Instead, the revisions he made to his *Essay* robbed theological utilitarianism of its providential and ethical dimension because the numbers he used supported a thesis that made it all but impossible to argue, as theological utilitarians did, that whatever is, is right. Although this thesis was present in the first edition of the *Essay*, its impact was somewhat cushioned in 1798 by the presence of a residual providentialism that took the form of a theodicy. In the first edition, Malthus blunted the brutal implications of his thesis that population growth always tends to outstrip the production of food with a theological account that supposedly explained how this situation advanced God’s plan. It was perhaps coincidental that he omitted his heterodox theodicy from the very edition in which he began to increase his reliance on numerical information (the 1803 edition). Whether coincidental or not, the combination of his effacing what remained of his original providentialism and his adding tables and numbers that theoretically demonstrated what he had previously been able only to assert helped make the *Essay* appear to reveal the essential heartlessness of political economy and to make numbers seem like the indifferent handmaiden to moralism’s demise.

The revisions that Malthus made to his *Essay* after 1798 were not solely responsible for reworking the cultural connotations of numerical representation, of course. To fully understand why the Christian Platonism so prominent in the gestural mathematics used by Shaftesbury, Hutcheson, Hume, and Paley gave way to an understanding of numbers that stressed their impartiality and methodological rigor, it would also be necessary to investigate contemporary Continental efforts to standardize weights and measures, as well the impact of British technological innovations like the spinning jenny, which required more precise calibrations but rewarded such precision with greater output.²⁹ Although some scholars have begun to open these vital subjects, however, the epistemological question I am addressing could never be answered simply by saying that the Scandinavian countries had already begun to adopt standardized measures by the middle of the eighteenth century or that some British entrepreneurs realized by 1780 that precision instruments increased yields and profits. Although it is true that Adam Smith visited a pin factory to observe the division of labor and that Malthus went to Scandinavia to collect numerical information for his initial revisions of the *Essay*, the simple existence of isolated

examples of this more secular understanding of numbers does not explain why Smith and Malthus thought they should consult them, nor does it explain what they thought they saw when they did. In offering Malthus's revisions as one site where the meanings of numerical representation were reworked at the end of the eighteenth century, then, I do not mean to attribute undue significance to this text. I do want to propose that the combination in his various revisions of a less obviously providential interpretation of contemporary society with a more copious use of numbers *that claimed actually to refer to particulars that had been counted* helped make numerical representation seem immune from the very theoretical strains with which the Christian Platonism of theological utilitarianism so thoroughly imbued it.

Before turning to Malthus's crucial revision of his *Essay*, it is important to recover the providentialism of the first edition, both because it is so often overlooked and because its peculiar quality helps explain why it could so easily have been excised. To appreciate the peculiarity of Malthus's providentialism, we have only to contrast his depiction of contemporary society with Stewart's optimistic account of human progress unfolding according to God's plan. Unlike Stewart, who was able to interpret even the French Revolution as simply another constructive experiment in politics, Malthus viewed the events of the 1790s as one pole of a "perpetual oscillation between happiness and misery."³⁰ When he looked around him—whether at the developments in France or at the disastrous effects of the grain scarcity at home—what Malthus saw were not signs of progressive improvement but human suffering and pain. To make the brutality and starvation so visible in the middle years of the decade seem like part of a providential plan, he had to adopt a variant of the interpretive device that Adam Smith had also used. Whereas Smith invoked the argument about unintended consequences to reconcile what he saw with what he believed should be true, however, Malthus explained the discrepancy by calling the misery he witnessed an exemplum of God's pedagogy: in order to inspire human beings to labor virtuously for their bread, Malthus asserted in the last two chapters of the *Essay*, God inflicted the principle of population on them; in order to wrest spirit out of the fallen flesh, he made suffering the daily lot of humankind.

I will return to Malthus's unorthodox theodicy in a moment. For now let me point out that even though Malthus used this explanation to make the misery he witnessed "fit" a providential plan, he did not share the methodological commitment to abstraction or prophetic optimism that went along with providentialism in Stewart's work. Instead, he sharply criticized philosophers who envisioned "illimitable, and hitherto unconceived improvement," both because they were blithely indifferent to the suffering around them and because they deployed an "unphilosophical mode of arguing." Indeed, in Malthus's account

these two errors were inevitably linked, for it was the "unphilosophical mode of arguing" epitomized by deduction from a priori principles that led philosophers either to dismiss observed particulars as signs of some greater and more momentous tendency or else to take "the higher classes" as types of humanity as a whole (1798; 67, 70, 78). Although Malthus's immediate targets were William Godwin and the French philosopher Condorcet, many of the criticisms he leveled at these spokesmen for perfectibility could have applied to Stewart as well. Indeed, the term on which Malthus concentrated his wrath is the word we have seen Stewart defend: conjecture. Having "shut [their] eyes to the book of nature," Malthus complained, such philosophers advance "the wildest and most improbable conjectures . . . with as much certainty as the most just and sublime theories, founded on careful and reiterated experiments" (1798; 126).

As this statement illustrates, instead of conjecture, Malthus recommended "experiments," which he insisted would corroborate and be confirmed by "experience, the true source and foundation of all knowledge" (1798; 72). Like a good Baconian, Malthus claimed he wanted to go out and look—especially at the poor, and especially at the most physical aspects of the impoverished Britons' lives, their food consumption and their rate of sexual reproduction. If one went and looked, Malthus asserts, it would be difficult to maintain that "the human mind" progresses, or even that "human nature" is the proper subject of philosophy. Indeed, it would be impossible even to see the universal subject that had so concerned eighteenth-century philosophers, for when one looked at the poor, one came face-to-face with the physical difference that inadequate nutrition made in the stunted bodies of those who looked back. "The sons and daughters of peasants will not be found such rosy cherubs in real life as they are described to be in romances," Malthus wrote. "It cannot fail to be remarked by those who live much in the country, that the sons of labourers are very apt to be stunted in their growth, and are a long while arriving at maturity" (1798; 93–94).

Although Malthus has been criticized for the limits of his empiricism (this is one of the very few passages in the first edition of the *Essay* that implies he actually observed the poor),³¹ he knew what questions would be relevant to a science that *was* thoroughly grounded in "actual observation and experience" (1798; 82):

Some of the objects of inquiry would be, in what proportion to the number of adults was the number of marriages, to what extent vicious customs prevailed in consequence of the restraints upon matrimony, what was the comparative mortality among the children of the most distressed part of the community and those

who lived rather more at their ease, what were the variations in the real price of labour, and what were the observable differences in the state of the lower class of society with respect to ease and happiness, at different times during a certain period. (1798: 78)

This passage is significant for several reasons. First, it suggests that Malthus's interest in the poor deconstructed the universal subject of eighteenth-century philosophy in the name of a cultural relativism written onto (what we would call) class. Second, it hints at a methodological claim that subsequent editions of the *Essay* would elaborate: that if one could obtain such proportions, comparative numbers, and variations in prices—if one could actually measure and count—then this would solve the problem of induction, because measuring counting, and figuring proportions and variations would bridge the gap between the observed particular and general knowledge. And third, the passage suggests that the kind of information Malthus wanted to collect about the poor would have brought into being another kind of collective subject. Like the universal subject of eighteenth-century philosophy, this subject would be seen to obey regularities—but not because the observer simply *assumed* it was universal; instead, this subject's regularities would be the effect of the very mathematical operations that made counting seem to bridge the gap between particular and generalizations. The regularities this subject displayed, in other words, would follow not from postulates but from observations and mathematical calculations.

Modern statisticians call this new kind of collective subject a "population." For them the population is a conceptual unit constituted in order to study inherently various or heterogeneous objects. With the help of hindsight we can see that the statistical population is produced by the same method that Stewart called abstraction; by means of some principle of classification, *which suits the philosopher's immediate purpose*, some features of the heterogeneous object are highlighted while others are ignored. Thus the modern statistician might intentionally ignore distinguishing factors like class or race, but *not* because she assumes these differences do not matter—not because she assumes *human nature everywhere the same*. Instead, and for the purposes of a particular calculation, the analyst wants to control for one factor and not others. Unlike Stewart, in other words, who vacillated between maintaining that the substantive abstraction generated by the method of abstraction highlighted features that were *actually* more essential (according to a God-given teleology) and hinting that these abstractions might simply serve the philosopher's need, modern statisticians insist that the statistical population is simply an analytic instrument. It does not purport either to identify the essential characteristics of its object of analysis or to reveal the universality of the results it produces.

Although Malthus implied such an analytic instrument when he argued that a combination of empirical and mathematical analyses would reveal the regularities of "the poor," the aggregate he called into being was *not* a statistical population. By the same token, of course, remember that when Malthus used "population," he was referring not to a statistical population, but variously to the number of people in Britain (what eighteenth-century commentators called "populousness")³² and to something else, which lies somewhere between the eighteenth-century universal subject and the modern statistical population. What he seems to have had in mind is an aggregate, many of whose most meaningful symptoms were amenable to numerical representation (possibly even mathematical formulation). But this aggregate was not constituted from some mathematical sense of representativeness ("statistical significance"), nor did all its truths yield to quantification. Indeed, we can see the transitional nature of Malthus's concept in the twin agendas he sought to mobilize in relation to this aggregate: he wanted to count and measure behaviors whose regularities could be calculated; and also he wanted to assess this aggregate's "happiness," an operation that required defining happiness instead of just manipulating numbers.

By claiming that if one *could* count, measure, and calculate one would generate a new kind of knowledge about a new kind of object, Malthus widened the gap between observation and belief that Smith's two versions of nature had also disclosed. If one could count, in other words, and if what one counted showed a population outstripping the production of food (as Malthus insisted it did), then what one saw could not possibly simply embody the benevolent interpretation of God that had been handed down from the eighteenth-century argument for design. In widening this gulf between one kind of knowledge production (counting) and another (reasoning from a priori principles or beliefs), Malthus helped strip numerical representation of the moral connotations that its eighteenth-century affiliation with Christian Platonism had preserved. And even though Malthus insisted that observing and counting were *not* antithetical to Christian belief, this approach helped make numbers (and the science that used them) seem both amoral and antitheoretical—hence both endlessly susceptible to manipulation by self-serving arithmeticians and infinitely useful to governments that wanted to insulate policy from the kind of a priori interestedness associated with party politics.

In 1798, of course, the kind of comprehensive counting that Malthus imagined had yet to be conducted in Britain. Equally to the point, and because he wanted to stress his own providentialism as much as he wanted to gather new data, Malthus did not wholeheartedly endorse collecting numerical data over reasoning from one's philosophical and religious convictions. While he asserted that *if* one could collect the kind of information he wanted, it would "probably

prove the existence of the retrograde and progressive movements that have been mentioned" (1798; 78), Malthus also insisted that one should hold on to one's beliefs. Unfortunately, even this was not an unambiguous position, for he unfolded his argument it became clear that even though the information one could collect would "probably" support one's philosophical beliefs (that population was outstripping food), it still would not bolster one's religious convictions (that God was not arbitrarily hurting humankind). It was to reconcile these two levels of belief that Malthus introduced the infamous theodicy that occupies the final chapters of the first *Essay*.

At the urging of more orthodox Anglicans, Malthus omitted this theodicy from all subsequent editions, and scholars have long debated its importance even to the one edition where it appears.³³ When considered from the perspective of methodology, however, the theodicy seems essential to Malthus's work, for it not only preserved the providentialism that Stewart had made central to political economy but did so in such a way as to highlight the transitional nature of the method Malthus advocated in the *Essay*. On the one hand in chapters 18 and 19 of the first edition, Malthus continued to assert the importance of empiricism; on the other hand, and often in the same sentence, he also insisted that a certain understanding of empiricism would support what we do and want to believe. Thus he rejected both theories that conjure perfection and those that consider life "a state of trial and school of virtue" on behalf of a belief he considered "more consistent with the various phenomena of nature which we observe around us and more consonant to our ideas of the power, goodness, and foreknowledge of the Deity" (1798; 200). This belief is that God is lawful; and it is corroborated, he continues, by what natural philosophy has proved: that nature is lawful too. Thus what one would see if one could gather sufficient data—people procreating faster than they can grow food, and famine, war, and pestilence checking population growth when people refuse to delay marriage—would reveal what the Christian philosopher believes: not that God made nature to serve human desires but simply that God manifests himself in the lawfulness of nature. By this interpretation, the apparent evil of the principle of population actually "produces a great overbalance of good," because the "strong excitements" occasioned by seeing this principle at work create both labor and self-control.

Strong excitements seem necessary to create exertion, and to direct this exertion and form the reasoning faculty, it seems absolutely necessary, that the Supreme Being should act always according to general laws. The constancy of the laws of nature, or the certainty with which we expect the same effects from the same causes, is the foundation of the faculty of reason. If in the ordinary course of things, the

finger of God were frequently visible, or to speak more correctly, if God were frequently to change his purpose (for the finger of God is, indeed, visible in every blade of grass that we see), a general and fatal torpor of the human faculties would probably ensue; even the bodily wants of mankind would cease to stimulate them to exertion, could they not reasonably expect that if their efforts were well directed they would be crowned with success. The constancy of the laws of nature is the foundation of the industry and foresight of the husbandman, the indefatigable ingenuity of the artificer, the skilful researches of the physician and anatomist, and the watchful observation and patient investigation of the natural philosopher. To this constancy we owe all the greatest and noblest efforts of intellect. To this constancy we owe the immortal mind of a Newton. (1798; 205)

In content, this statement resembles innumerable eighteenth-century claims about "the laws of nature"; indeed, the claim that nature is lawful constituted the basis for all philosophical enterprises after the seventeenth century.³⁴ Coming as it does, however, in the last two chapters of the first *Essay* and in the form of an unorthodox defense of what could also be read as a pessimistic description of the inevitable misery of human existence, to many contemporaries Malthus's providentialism seemed too little too late. Because he had widened the gulf between what he claimed observations would reveal and what he said we must and do believe, many of them interpreted this theodicy as an afterthought, a belated attempt to undo the damage he had already done. Thus, whereas modern readers might argue that there is something wrong with his *method*—that his empiricism cannot support the providentialism from which it actually derives³⁵—early nineteenth-century readers complained that there was something wrong with the *content* of the argument itself. They charged that Malthus's pessimism undermined hope, that his claims that misery served a spiritual use sanctioned the neglect of the poor by those more interested in wealth than in virtue.

As we will see, some of Malthus's earliest readers welcomed his suggestion that more empirical data be collected, even if it was possible to read his use of numbers as dangerously amoral, as many of his contemporaries did. By and large, by contrast, his contemporaries did *not* welcome his conclusions, no matter how he claimed to have reached them. That he not only combined these conclusions with calls for collecting and consulting data but formulated his most fundamental principle as a *mathematical ratio*, moreover, encouraged critics who rejected his conclusions on theological or ethical grounds to target his *method*, even though what they had to say about it often simply ignored the providential underpinnings that seem so odd to modern readers. Many of Malthus's contemporaries did not agree with his conclusions, in other words,

and because they had no way to evaluate the numerical data he did present much less to tie such numbers to the infamous ratio, they focused on the method that seemed, in form at least, related to the numbers.

The first two editions of Malthus's *Essay* attracted some critical notice, but the vitriolic controversy that converted political economy into Malthusianism did not erupt until 1806, after the publication of the third edition.³⁶ As I have noted, Malthus had deleted the theodicy from the second edition, which was published in 1803, so what sparked the firestorm could have been neither the heterodoxy of the last two chapters nor the discrepancy between what he claimed were empirical observations and his attempt to fit these to a providential plan. Instead, some combination of Malthus's heavy-handed dismissal of his critics (he declared them "beneath notice") and what he added to the second and third editions must have provoked the public outcry. What he added to the second and third editions, of course, were numbers: tables of annuities, population growth, and food prices, which were assembled from records as diverse as bills of mortality, census returns, and agricultural records. I suggest it was these numbers, *coupled with* the elimination of his explicit providential scheme, that helped make Malthus seem the demonic spokesman for the end of moral knowledge and numbers the amoral vehicle of indifferent facts.

In the preface to the *Essay*'s second edition, Malthus admitted that the first edition was "written on the spur of the occasion, and from the few materials which were then within my reach in a country situation. The only authors from whose writings I had deduced the principle, which formed the main argument of the *Essay*, were Hume, Wallace, Adam Smith, and Dr Price."³⁷ Immediately upon completing the first edition, Malthus determined to test what had essentially been a deduction against the kind of numbers he had wanted all along. Thus he began to collect and read every book he could obtain on demography, population, and commerce; and he and three college friends conducted a study tour through all the countries then open to Britons: Norway, Sweden, Finland and Russia. In 1802, after the Peace of Amiens, Malthus extended his investigations to France and Switzerland. The results of his investigations are immediately apparent in the size of the second edition: whereas the first *Essay* was published as an octavo volume of 396 pages and 55,000 words, the second edition was a quarto of 610 pages and 200,000 words; and whereas Malthus consulted only four texts for his initial volume, the bibliography for subsequent editions contains close to two hundred entries.³⁸

The number and kind of sources Malthus cites in the later editions of the *Essay* constitute a fair sampling of the extent and nature of the sources of numerical data available to a private, liberally educated individual at the turn of the century. Among his sources are Alexander Humboldt's *Essai politique sur le*

royaume de la Nouvelle Espagne, the *Philosophical Transactions* of the Royal Society, Adam Seybert's *Statistical Annals . . . of the United States*, the United States census returns beginning in 1790 (published as *Population Abstract*), the American *National Calendar*, Joshua Milne's *Treatise on the Valuation of Annuities and Assurances*, John Bristed's *America and Her Resources*, William Tooke's *View of the Russian Empire*, and Suessmilch's *Göttliche Ordnung*. As this list illustrates, most numerical data available in print had been collected outside Britain; and until the first census returns (from the census of 1801) and the first official statistics on pauperism (in 1818, from the survey of 1812–15) were available, the scant data that had been collected about Britain had typically been generated by private organizations or individuals. This bibliography makes it clear that Malthus's revised *Essay* was not the only, or even the first, source of numerical information in or about Britain; not only had the figures gathered by Henry Fielding and Jonas Hanway long been in print, but in the 1790s John Sinclair had compiled his enormous *Statistical Survey of Scotland*, and in 1797 Sir Frederick Morton Eden had published *The State of the Poor*, which contained voluminous numerical data.³⁹ Despite the availability of these texts, however, and especially in the context of the irregular nature of the data available about Britain, Malthus's revised *Essay* played a particularly significant role in the revaluation of numerical representation to which all these texts contributed, if for no other reason than that the *Essay* aroused such public controversy.

Not surprisingly, Malthus used the numerical data he added to the second edition to prove the principles he asserted in the first *Essay*: that, if unchecked, population will increase at a geometrical rate; that, if unimproved, agriculture will increase food supplies arithmetically; and that, since population has not yet outrun food supplies, some combination of "checks" must be capable of curbing population growth. Even though his general conclusions were the same, however, the method by which he reached these conclusions opened the space for an analysis that might lead another investigator to results he did not expect. Thus, for example, when Malthus explains why the information he includes in book 2 of the revised edition ("Of the Checks to Population in the Different States of Modern Europe") reveals both regularities in the course of population considered as a whole and variations among the countries he examined, he proposes that, if one looked at "different places of the same country," not to mention different (and non-European) countries, one might find data one had not expected:

The habits of most European nations are of course much alike, owing to the similarity of the circumstances in which they are placed; and it is to be expected therefore that their registers [of births, deaths, and marriages] should sometimes give the

same results. Relying however too much upon this occasional coincidence, political calculators have been led into the error of supposing that there is, generally speaking, an invariable order of mortality in all countries; but it appears, on the contrary, that this order is extremely variable; that it is very different in different places of the same country, and within certain limits depends upon circumstances which it is in the power of man to alter. (1826, 1803; 259/260)

While the numerical data included in book 2 finally support Malthus's original thesis, then, passages like this also encouraged other advocates of numerical data to imagine that numerical information could be used to challenge their opponents' theoretical presuppositions or to defend their own, precisely because numbers seemed not always to support the thesis one set out with—precisely because numbers seemed to be divorced from theory.

Although Malthus's copious numbers, as well as his references to numbers disproving the errors that “political calculators” had cherished, encouraged readers to imagine that he was divorcing numbers from their theoretical (and moral) underpinnings, this was clearly not so in any of the editions of the *Essay*. Even without the theodicy, and even though he cited numerous calculations to document his controversial claims, Malthus's revised *Essay* used only numbers that constituted *evidence* for his thesis. Although the role he assigned numbers in all the revised editions implied that counting might solve the problem of induction by bridging the gap between observed particulars and general knowledge, moreover, Malthus was never explicit about how one might move from such numerical data to general conclusions (instead of working the other way round, from one's foundational assumptions to choosing the numbers that constituted evidence to support them). Malthus seems to have been uncertain whether *averages* were identical to *arithmetical limits*, for example, and he was not sure whether averages should be treated as *norms*.⁴⁰ Without the concept of a statistical population, whose regularities *create* statistical norms, Malthus lacked a way to conceptualize the relative importance of averages in his argument about population laws. He compounded the effects of this methodological ambiguity when he construed his fundamental principle as a set of mathematical formulas, for this cast a spurious aura of certainty over his conclusions. Almost immediately, even sympathetic readers complained that mathematical rigor was inappropriate to the kinds of claims he advanced. In 1840 John Stuart Mill was still trying to undo the damage Malthus inflicted on his thesis by “the unlucky attempt to give numerical precision to things which do not admit of it.”⁴¹

Even if Malthus did not divorce numerical data from the providential postulates that were so prominent in the first edition, however, and even if some readers argued that his mathematical formulas were expendable, the combina-

tion of such densely marshaled numbers and Malthus's elimination of the theodicy made it possible for unsympathetic critics to interpret the facts he presented as if they had been altogether denuded of theory (and hence morality). Thus, even though some readers praised Malthus for using numbers—and some, like John Weyland, even called for more numbers⁴²—many targeted the wedge that he seemed to have driven between numbers and morality as the heart of the problem. To appreciate the nature of this complaint, we have only to turn to the romantic campaign against Malthus, which was conducted without intermission from at least 1812 until the 1830s.⁴³

Led by Robert Southey and Samuel Taylor Coleridge, who were joined by William Wordsworth, Thomas De Quincey, and William Hazlitt, the romantic attack on Malthus targeted many subjects: his initial failure to acknowledge that human beings were sufficiently virtuous to control their sexual appetites, his inconsistency in adding “moral restraint” to the list of “preventive checks” in the second edition, his fear of a growing population (which, Southey maintained, was essential to national strength), his criticism of the poor law. For our purposes, however, the most powerful criticisms were those that focused on his use of numbers. Significantly, Malthus's romantic critics did not charge simply that he had chosen the wrong numbers or that the numbers he used did not prove what he claimed they showed; instead, these critics complained that numbers were irrelevant to the kind of knowledge he claimed to produce. When Southey set mathematical demonstration in opposition to “religious argument,” for example, we can see just how radically Malthus's use of numbers seemed to have departed from that of the eighteenth-century philosophers.

The Malthusians observe, in reply to such objections, that the new discovery is [a] matter of science, and that religious argument cannot be permitted to stand in the way of demonstration. . . . If the two things were incompatible the consequence could not be avoided; the argument of the geometrical and arithmetical series was a demonstration, and Divine Providence must go to the wall! But there is a moral *reductio ad absurdum* which the man of enlightened piety feels to be demonstrative wherever it applies: he knows in his heart that whatever opinion is wholly and flagrantly inconsistent with the goodness of creating and preserving wisdom, must necessarily be false; and in this knowledge he cannot be deceived, for it is the voice of God within him which tells him so.⁴⁴

In 1728, as we saw in chapter 4, “science” and geometry were not considered antithetical to religious argument; indeed, Francis Hutcheson claimed that his gestural mathematics was the science capable of demonstrating those religious principles the philosopher “knows in his heart.” In 1812, by contrast, Southey could accuse the Malthusians of setting science against religion, both because

the conclusions Malthus had reached did not echo what Southey knew in his heart and because he could interpret Malthus as claiming that his use of numbers was incontrovertible *because* numbers were impartial and thus had nothing to do with what one finds in one's heart.

Coleridge drew out the ethical implications of the claim (or complaint) that numbers are impartial when he accused Malthus of moral relativism. "It is this accursed practice of ever considering *only* what seems *expedient* for the occasion, disjoined from all principle or enlarged systems of action, of never listening to the true and unerring impulses of our better nature, which has led our colder-hearted men to the study of political economy." Coleridge charged. "In Coleridge's eyes, Malthus's method seemed dangerously close to casuistry—the old juridical mode of making case decisions in the absence of absolute standards. Even worse, as the word "expedient" implies, this method seemed to him to encourage people to accommodate means to ends. It wasn't just that Malthus's version of political economy "disjoined" actions "from all principle or enlarged systems of action" (although this enraged Coleridge too); beyond this, political economy seemed to *replace* the providentialism that Coleridge thought should guide philosophy with another agenda—one that served not the "better nature" that supposedly united all humans but the most self-serving desires of those who were most powerful.

If numbers were impartial—if they could be made to serve any agenda, no matter how heartless or amoral—then the few who used them could inflict actual damage on the many who were powerless to resist. According to Southey, the political economists who used numbers did just this: by means of and on behalf of the "manufacturing system," the economists (who included but were not limited to Malthus and Smith) defended the capitalists, who piled up wealth in pursuit of a religion as cruel as it was false.

The manufacturing system . . . has enabled us to raise a revenue which twenty years ago we ourselves should have thought it impossible to support, and it has added even more to the activity of the country than to its ostensible wealth; but in a far greater degree has it diminished its happiness and lessened its security. Adam Smith's book is the code, or confession of faith, of this system; a tedious and hard-hearted book, greatly over-valued even on the score of ability, for fifty pages would have comprised its sum and substance. . . . That book considers man as a manufacturing animal, —a definition which escaped the ancients: it estimates his importance, not by the sum of goodness and of knowledge which he possesses, not by the virtues and charities which should flow toward him and emanate from him, not by the happiness of which he may be the source and centre, not by the duties to which he is called, not by the immortal destinies for which he is created; but by the gain

which can be extracted from him, the *quantum of licitation* of which he can be made the instrument.⁴⁶

In such passages we can see how effectively Malthus's claim that numbers might reveal something other than God's plan could be used not only against him, but against the entire "manufacturing system" that he (and Adam Smith) were charged with defending. Given the providentialism that was explicit in the first edition of Malthus's *Essay* (and residual in all subsequent editions), it seems ironic that he should have been one of the targets of such venomous attacks.⁴⁷ When placed alongside the work of David Ricardo, after all, who vaulted into the front rank of political economists in 1817, Malthus's *Essay* looks like an effort to make political economy accommodate, not throw out, virtues, goodness, and happiness. Ricardo could not understand Malthus's desire to retain both a theological vocabulary and a moral component;⁴⁸ Southey did not even see that he had done so. That both responses to Malthus were possible in the second decade of the nineteenth century reflects the range of positions about what constituted useful knowledge that had become available by 1817—and just how controversial numerical representation had become.

POPULARIZING POLITICAL ECONOMY: J. R. MCCULLOCH AND THE TAXONOMY OF MODERN KNOWLEDGE

During the 1820s, proponents of political economy engaged in a heated debate about the nature of political economy itself. Generally known to historians as the Malthus-Ricardo debate, this dispute turned on two questions: Was national well-being primarily a matter of "wealth" or of "happiness"? And by what method should political economists generate knowledge?⁴⁹ This debate about the proper object and method of political economy was sparked by the publication in 1817 of David Ricardo's *Principles of Political Economy*, but it was fueled by the same issues that provoked Ricardo: in the wake of the Napoleonic Wars, rising poor rates made poor law reform seem increasingly pressing, the suspension of cash payments by the Bank of England raised new questions about credit, and increases in taxes and the national debt led politicians and philosophers to reassess the relation between national prosperity and security. Ricardo's response to these developments was to recast political economy as a mathematical science, whose exclusive concern was the mathematically determined behavior of wealth. By converting policy issues into mathematical formulas, and by capitalizing on the impartiality and rigor associated with mathematics (more than counting), Ricardo sought to place the conclusions of

measure they permit, constituted one site at which the traditional Scots and modern English cultures continued to clash. "After two days at *Itinerary* we proceeded *Southward* over *Glencree*, a bleak and dreary region, now made easily passable by a military road, which rises from either end of the *glen* by an acclivity not dangerously steep, but sufficiently labourious. In the middle, at the top of the hill, is a seat with this inscription, *Rest, and be thankful*. Stones were placed to mark the distances, which the inhabitants have taken away, resolved they said, to *have no new miles*" (118). For a discussion of the condition of Scottish roads during this period, see Anne Gordon, *To Moine Mòr* (*The Story of Transport and Travel in Scotland*) (Aberdeen: Aberdeen University Press, 1988), chaps. 2-5.

56. Lord Kames, *Sketches*, vol. 1, sketch I. Here Kames concludes that "there are differences of men fitted by nature for different climates" (1:23). Lord Monboddo (James Burnett) published the first volume of his six-volume *Of the Origin and Progress of Language* in 1773 (the final volume appeared in 1792) and the equally ambitious *Ancient Metaphysics* between 1779 and 1799. One of the most dramatic social events of Johnson's tour of Scotland was his meeting with Monboddo, although Johnson barely mentioned it; in his *Journal of a Tour to the Hebrides* (1785), Boswell more than made up for Johnson's silence. On the meeting with Monboddo and Monboddo's anthropological speculations more generally, see Rogers, *Johnson and Boswell*, appendix (226-31).

57. "Populousness" was the term commonly used in eighteenth-century Britain for the relative density of inhabitants in any given place. The currency of this term suggests that eighteenth-century politicians and philosophers were more interested in the density of habitation than either the absolute size or the increase (or decrease) of what we would call the "population" (although a vigorous debate about whether the British were increasing or decreasing in number raged during the second half of the century). I will return to the issue of population in the next chapter. For one contemporary contribution to the subject of "populousness," see Hume, "Of the Populousness of Ancient Nations," in *Essays*, 377-464.

58. Smith associated curiosity with the debased genre of the novel, and he considered modern novelists' tendency to resort to suspense inferior to ancient historians' use of important facts. "As newness is the only merit in a Novel and curiosity the only motive which induces us to read them, the writers are necessitated to make use of this method [suspense] to keep it [interest] up. Even the Antient Poets who had not reality on their side never have recourse to this method, the importance of the narration they trust will keep us interested" (*Lectures on Rhetoric*, 97; see 96-97).

Chapter Six

1. See Collini, Winch, and Burrow, *That Noble Science of Politics*, esp. 4-5. Donald Winch revisits and refines some of these methodological issues in *Riches and Poverty*, chap. 1, and 236.
2. Discussions of Stewart's influence on Henry Brougham, Francis Horner, James Mackintosh, and Francis Jeffrey can be found in Collini, Winch, and Burrow, *That Noble Science of Politics*, chap. 1, and Biancamaria Fontana, *Rethinking the Politics of Commercial Society: The "Edinburgh Review," 1802-1832* (Cambridge: Cambridge University Press, 1985), chap. 1, and 96-104.
3. On the importance of Stewart's pedagogy, see Philipson, "Pursuit of Virtue," 82-101.
4. Fontana argues that McCulloch's *Discourse on the Rise, Progress, Peculiar Objects and Importance of Political Economy* is "the sole document we possess by a member of the *Edinburgh Review* group which offers an academic presentation of the subject matter of political economy roughly comparable with that outlined in Stewart's lectures" (*Rethinking Commercial Society*, 105). Although I agree with Fontana that McCulloch's text is "roughly comparable" with Stewart's writings, I emphasize the disciplinary differences between the two in the last section of this chap-

ter. McCulloch attended Edinburgh University from 1807 to 1811 (although he did not graduate), so it is possible that he heard Stewart lecture in the latter's last years at Edinburgh.

5. In addition to the works I have already cited, see Knud Haakonssen, "From Moral Philosophy to Political Economy: The Contribution of Dugald Stewart," in *Philosophers of the Scottish Enlightenment*, ed. V. Hope (Edinburgh: University of Edinburgh Press, 1984), 211-32. Haakonssen argues that Stewart's revisions of Smith constitute a "dissolution" of Smith's intentions (212).

6. Stewart, *Philosophy of the Human Mind*, 99. Future references will be cited in the text by page number.

7. "It is chiefly in compliance with common language and common prejudices, that I am sometimes led in the following observations, to contrast theory with experience. In the proper sense of the word theory, it is so far from standing in opposition to experience, that it implies a knowledge of principles, of which the most extensive experience alone could put us in possession" (*Philosophy*, 147).

8. Haakonssen has emphasized Stewart's attention to system and to the future. See "From Moral Philosophy to Political Economy," esp. 228-30.

9. Haakonssen attributes Smith's subjectivism to two factors: his commitment to a developmental theory of moral phenomena and his insistence that the only basis for moral judgments is the ability to identify with others through sympathy. "Moral judgements are therefore to be understood as formed under the influence of a vast complexity of previous moral judgements, either directly or as they are internalised by the individual, and normally both. And at the same time the present judgement may of course well contribute to, and maybe change, this social store of moral knowledge. In this way the theory of the development of moral phenomena becomes a necessary element in the theory of morality, and this theory of development is turned into history once we add the particular circumstances of the society in question—its relationship to other societies, its physical circumstances, its exposure to accidental factors of all sorts" ("From Moral Philosophy to Political Economy," 217).

10. Stewart, *Account of the Life and Writings of Adam Smith, LL.D.*, in *Collected Works of Dugald Stewart*, 18:58.

11. Smith, *Wealth of Nations*, 5.3.2; 734-40.

12. On Stewart's indebtedness to Condorcet and his awkward attempts to distance his work from that of French theorists, see Collini, Winch, and Burrow, *That Noble Science of Politics*, 32-44. Stewart's admiration for the French *économistes* appears in *Philosophy of the Human Mind*, 155-61.

13. The note chastises anxious Britons for confounding "the speculative doctrines of Political Economy, with those discussions concerning the first principles of Government which happened unfortunately at that time to agitate the public mind." Stewart defiantly reprinted his original text, but he implied that, however he felt about the right of philosophers to debate state policy, he did have new criticisms of Smith's system, which he promised to publish in another treatise. See *Account of the Life*, in *Collected Works of Dugald Stewart*, n. G, 87.

14. *Ibid.*, n. 1, 88-95.

15. Stewart, *Dissertation: Exhibiting the Progress of Metaphysical, Ethical, and Political Philosophy, since the Revival of Letters in Europe*, in *Collected Works*, 1:97, 477-78. Note that Stewart praises political economists for their philosophical method, not for their particular doctrines. "Whatever praise, therefore, may be due to the fathers of the modern science of political economy, belongs, at least in part . . . to those abstract studies by which they were prepared for an analytical investigation of its first and foremost principles" (478).

16. The most notable exception to this generalization is Winch, *Riches and Poverty*, esp. part 3.

17. Charles Dickens, *Hard Times* (1854; Harmondsworth: Penguin Books, 1969), 48 (chap. 2).

18. On Bentham's desire for numerical information, see John R. Poynter, *Society and*

Pauperism: English Ideas on Poor Relief, 1795-1834 (London: Routledge and Kegan Paul, 1969), 129-30. Poynter notes that Bentham made a proper system of bookkeeping a centerpiece of his planned Houses of Industry, that he was frustrated by the British government's failure to undertake a national census, and that he even tried to gather the numerical information the government had yet to supply when he asked parishes to return lists of indoor and outdoor paupers in the 1790s. To his despair, most of the parishes failed to respond. While Bentham's efforts to encourage and revitalize numerical information obviously form a part of the story I want to tell, his influence was registered most powerfully through his disciples, especially Edwin Chadwick and James Mill, in the 1830s.

19. Bills of mortality had probably been kept for London since at least 1592, although no bills from before 1658 survived the Great Fire of London (1666). It is also unclear when these bills were first published, although by 1662 they were regularly printed and subscribers could purchase them for four shillings a year. Whatever their origin and however frequently they were printed, it is clear that after 1603 these records were regularly kept by parish clerks. They continued to be kept until 1849, by which time they had been superseded by the bills issued, since 1840, by the new office of the registrar-general. See Charles Henry Hull, "On the Bills of Mortality," in *The Economic Writings of Sir William Petty*, ed. Charles Henry Hull (Cambridge: Cambridge University Press, 1899; reprint, Fairfield, N.J.: Augustus M. Kelley, 1986), lxxx-lxxxv. On the disputed authorship of the "Observations upon the Bills of Mortality," see Hull, "The Authorship of the 'Observations upon the Bills of Mortality,'" also in *Economic Writings*, xxxix-liv.

Life tables were intended to convert the data provided by the bills of mortality into information that could be used for determining the value of annuities or the price of insurance, or even for estimating the proportion of men available for military conscription. In his important account of eighteenth-century life tables, Peter Buck argues that before about 1750 these tables (however inaccurate) were primarily intended to support the needs of the state; they were, in other words, instruments of political arithmetic. After midcentury, partly because the British government was no longer willing to rely on annuities for revenue, political arithmetic concerns no longer framed the study of the bills of mortality. Instead, the importance of life tables began to turn on their use for private insurance. See Buck, "People Who Counted," 28-45. Although his work constitutes an invaluable contribution to our understanding of who collected this kind of numerical information in eighteenth-century Britain and the purposes for which it was collected, Buck does not engage the sticky question of why insurance companies did not base their price structures either on the most reliable life tables or on mathematical probability until 1785. This perplexing issue has been addressed by Lorraine Daston, "The Domestication of Risk: Mathematical Probability and Insurance, 1650-1830," in *The Probabilistic Revolution*, ed. Lorenz Kruger, Lorraine J. Daston, and Michael Heidelberger (Cambridge: MIT Press, 1987), 1:237-60, and Geoffrey Wilson Clark, "Betting on Lives: Life Insurance in English Society and Culture, 1695-1775" (Ph.D. diss., Princeton University, 1993).

20. On the scarcity and unreliability of numerical accounts of poor relief, see Poynter, *Society and Pauperism*, 19, 141, 225, 276, 281. "Even later [after 1785], when returns were more continuous, it is difficult to allow for changes in food prices, in the value of money generally, in population and pauper numbers, and for the extent to which relief was paid in lieu of wages. Mere totals do not tell us much. Late seventeenth-century estimates by King (£622,000), and Dunning (£819,000) were only guesses, as was Fielding's estimate of £1 million in 1754. The first Parliamentary returns showed an average of £698,971 for the years 1748-50, but were so imperfect that they were put aside behind the Speaker's Chair and not published until found by the astuteous Rickman and the Select Committee of 1817-18" (19).

21. On the parliamentary committees, which were appointed in 1775 and 1786, see *English Poor*, 77. M. Dorothy George discusses the Society for Bettering the Condition of the Poor in *London Life in the Eighteenth Century* (1925; reprint, Chicago: Academy Chicago, 1970), 125. As the precedents to calls for this kind of information (although they did not all result in numerical information) George cites Henry Fielding's *Proposal for Making an Useful Provision for the Poor* (1753) and Jonas Hanway's various pleas on behalf of the infant poor in *workhouse: A Candid Historical Account of the Hospital for . . . Exposed and Deserted Young Children* (1759) and *An Earnest Appeal for Mercy to the Children of the Poor* (1766). The society founded to improve the conditions of the poor was the Society for Bettering the Condition and Increasing the Comforts of the Poor. See Poynter, *Society and Pauperism*, 91-98.

22. On the scarcity of bankruptcy information, see Sheila Marriner, "English Bankruptcy Records and Statistics before 1850," *Economic History Review*, 2d ser., 33, no. 3 (1980): 351-67, and Julian Hoppitt, *Risk and Failure in English Businesses, 1700-1800* (Cambridge: Cambridge University Press, 1987), chaps. 1-2. On Josiah Wedgwood's rejection of cost accounting, see Neal McKendrick, "Josiah Wedgwood and Cost Accounting in the Industrial Revolution," *Economic History Review*, 2d ser., 23, no. 1 (1970): 45-67.

23. See Sir John Sinclair, *The Statistical Account of Scotland, 1791-1799*, ed. Donald J. Withington and Ian R. Grant, 21 vols. (Edinburgh: EP Publishing, 1983), and Donald J. Withington, "What Was Distinctive about the Scottish Enlightenment?" in *Aberdeen and the Enlightenment*, ed. Jennifer J. Carter and Joan H. Pittock (Aberdeen: Aberdeen University Press, 1987), 9-19.

24. See, for example, Thomas, "Numeracy in Early Modern England," 103-32; Buck, "People Who Counted," 32-35; and Cohen, *Calculating People*, chap. 1.

25. From Richard Cumberland, *De Legibus Naturae Disquisitio Philosophica* (1672; translation published in 1727 as *A Treatise of the Law of Nature*); quoted in Miller, *Defining the Common Good*, 272.

26. The classic studies of utilitarianism more generally are Elie Halévy, *La formation du radicalisme philosophique*, 3 vols. (Paris, 1901-4); Ernest Albee, *A History of English Utilitarianism* (London: G. Allen and Unwin, 1901); and John Plamenatz, *Mill's Utilitarianism, with a Study of the English Utilitarians* (Oxford: Basil Blackwell, 1949). These writers tended to focus on the nineteenth-century secular variant of utilitarianism, but as David Lieberman has recently argued, Bentham's secular utilitarianism did not displace its theological predecessor until the mid-1830s, when J. S. Mill and William Whewell began to represent Bentham as a moralist (Lieberman, "Happiness 101: William Paley, Utilitarianism and Moral Instruction in Eighteenth-Century England," unpublished manuscript, University of California, Berkeley, 1996). I am indebted to him for letting me read this essay in manuscript. Another reassessment of theological utilitarianism is Thomas A. Horne, "The Poor Have a Claim Founded in the Law of Nature": William Paley and the Rights of the Poor," *Journal of the History of Philosophy* 23, no. 1 (1985): 51-70.

27. William Paley, *Principles of Moral and Political Philosophy*, 9th American ed. (Boston: West and Richardson, 1818), 50.

28. See Winch, *Rights and Poverty*, 243-44; Eric Heavener, "Food, Sex, and God: The Christian Social Theory of T. R. Malthus" (Ph.D. diss., Johns Hopkins University, 1992), 46-48; and S. H. Hollander, "Malthus and Utilitarianism with Special Reference to the *Essay on Population*," *Utilitas* 1 (1989): 170-210.

29. The best collection of essays on this important subject is Tore Frangsmyr, J. L. Heilbron, and Robin E. Kider, eds., *The Quantifying Spirit in the Eighteenth Century* (Berkeley: University of California Press, 1990).

30. Thomas Robert Malthus, *An Essay on the Principle of Population*, ed. Antony Flew (1798; reprinted, London: Penguin Books, 1982), 67. Future references to this, the first edition, will be cited in the text by date ("1798") and page number.

31. See R. B. Simons, "T. R. Malthus on British Society," *Journal of the History of Ideas* 16 (1955): 73.

32. The problem of populousness encouraged several eighteenth-century British writers to offer estimates of the size of the population, even though nothing resembling a modern census had been conducted in Britain. In general these attempts were either local, like Thomas Percival's *Further Observations on the State of the Population in Manchester and Other Adjacent Places* (1773), or speculative, like Richard Price's *Essay on the Population of England from the Revolution to the Present Time* (1779).

33. Beginning in his own day, most analysts of Malthus have discounted the theodicy and have tended to downplay the importance of theological issues in his version of political economy. In the past twenty-five years, however, this has begun to change. In addition to Winch, *Riches and Poverty*, and Heaver, "Food, Sex, and God," see also J. M. Pullen, "Malthus' Theological Ideas and Their Influence on His Principle of Population," *History of Political Economy* 13, no. 1 (1981): 39-54, and M. B. Harvey-Phillips, "Malthus' Theodicy: The Intellectual Background of His Contribution to Political Economy," *History of Political Economy* 16, no. 4 (1984): 591-608.

34. For a discussion of the history of this concept, see Milton, "Origin and Development of the Concept of the 'Laws of Nature,'" 173-95.

35. This criticism is implicit in Poynter's argument that Malthus's method was not empirical enough, for example. See *Society and Pauperism*, 147-48.

36. *Ibid.*, 165-77.

37. "Preface to the Second Edition," reprinted in *Essay on the Principle of Population*, sixth edition (1826), with variant readings from the second edition (1803), in *The Works of Thomas Robert Malthus*, ed. E. A. Wrigley and David Souden, 8 vols. (London: William Pickering, 1986), 2:iii-iv. Most of the additions that appeared in the second edition were reprinted in all subsequent editions. Because the editors of Malthus's *Works* have republished only the sixth edition (with variant readings from the second), I cite that edition in what follows.

38. See Antony Flew, introduction to Malthus, *Essay* (1798), 13; and for the bibliography, *Works*, 3:701-11.

39. On Eden, see Poynter, *Society and Pauperism*, 111-17. Poynter reports that Eden confessed his numbers were unreliable, both because the evidence was incomplete and because laborers (he claimed) tended to understate their wages (115). Note also that John Rickman, who finally succeeded in convincing Parliament to institute a regular census, was lobbying for numerical information throughout the first decades of the nineteenth century. See *ibid.*, 245, 251-53.

40. This is Antony Flew's complaint: "From the subsistence of such a general average limit you cannot validly deduce that the same limit will be effective all the time in every particular case. On the contrary, if there is to be any point in talking of an average, there must be room for cases falling both above and below the average" (introduction to Malthus, *Essay* [1798], 36).

41. Quoted in *ibid.*, 39. Flew also discusses the insight offered by Archbishop Richard Whately and Nassau Senior that Malthus confused two senses of "tendency": "that in which a tendency to produce something is a cause which, operating unimpeded, would produce it; and that in which to speak of a tendency to produce something is to say that that result may reasonably be expected in fact to occur" (*ibid.*, 38).

42. When John Weyland, a rural justice of the peace who issued his first attack on Malthus in 1807, voiced two different opinions in the same pamphlet, he revealed that the same person might hold a variety of convictions about numbers and knowledge. On the one hand, Weyland

considered numerical information sufficiently important to warrant a prefatory call for readers to supply "observations, accompanied with facts, that may tend either to confirm or impugn any part of his opinions." On the other hand, however, he objected to Malthus's tendency to use numbers indiscriminately; in particular, he criticized his use of numbers to equate individuals who are essentially different in kind. It was absurd for Malthus to argue that an adult male who emigrates or dies in war encourages propagation at home, Weyland asserts: "The bare fact, as to numerical population, may approach to something near the truth; but as the animal lost by war, or emigration, is an active, perfect, proper man; and the thing got in return is not even an infant, but only the prospect (certain to be sure) that he will be replaced by one; the conclusion, as to numerical population, is certainly incorrect; and as to national power, altogether unfounded." [John Weyland], *A Short Inquiry into the Policy, Humanity, and Past Effects of the Poor Laws . . . in Which Are Included a Few Considerations on the Questions of Political Oeconomy, Most Intimately Connected with the Subject; Particularly on the Supply of Food in England* (London: J. Hatchard, 1807), xv, 52. Weyland later published a more sustained attack on Malthus, *The Principles of Population and Production as They Are Affected by the Progress of Society with a View to Moral and Political Consequences* (1820).

43. Donald Winch discusses the romantic critique of Malthus in *Riches and Poverty*, chap. 11. See also Poynter, *Society and Pauperism*, 171-85.

44. Robert Southey, "On the State of the Poor, the Principle of M. Malthus's Essay on Population, and the Manufacturing System, 1812," in *Essays, Moral and Political*, vol. 1 (London: John Murray, 1832), 87-88. This essay was originally published in the *Quarterly Review* in 1812.

45. Samuel Taylor Coleridge, cited in Thomas Allsop, ed., *Letters, Conversations and Recollections of S. T. Coleridge* (London: E. Moxon, 1836), 136-37; Coleridge uses "political empiric" in *Lay Sermons*, in *The Collected Works of Samuel Taylor Coleridge*, ed. R. J. White (London: Routledge and Kegan Paul; Princeton: Princeton University Press, 1972), 6:143, 150-55. See also Winch, *Riches and Poverty*, 289-90, 295-96.

46. Southey, "On the State of the Poor," 111, 112.

47. See Winch, *Poverty and Riches*, chap. 11.

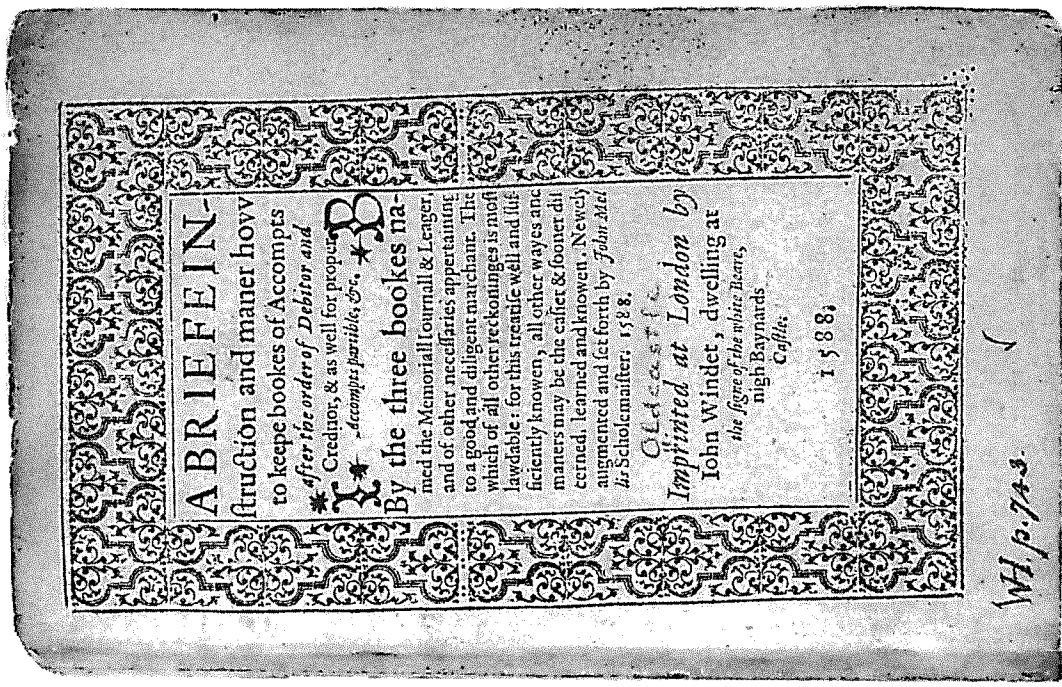
48. Of Malthus's tendency to use the theological language of "God's gift" to pursue moral principles, Ricardo wrote: "I do not agree that in a treatise on Political Economy it should be so considered. The gift is great or little according as it is more or less, not according as it may be more or less morally useful" (quoted in Winch, *Riches and Poverty*, 350, from *Notes on Malthus*, in David Ricardo, *The Works and Correspondence of David Ricardo*, ed. Piero Sraffa and H. M. Dodd [Cambridge: Cambridge University Press for the Royal Economic Society, 1951-73], 2:210).

49. On the Malthus-Ricardo debate, see Collini, Burrow, and Winch, *That Noble Science of Politics*, chap. 2, and Winch, *Riches and Poverty*, chap. 13. For an important discussion of the methodological component of this debate, see Goldman, "Origins of British 'Social Science,'" 587-616.

50. Quoted in Collini, Burrow, and Winch, *That Noble Science of Politics*, 79, from *Quarterly Review* (January 1824).

51. [J. R. McCulloch], "Ricardo's Political Economy," *Edinburgh Review* 30 (June 1818): 59-87; quotation on 64. This was the first of McCulloch's thirty-one contributions to the *Edinburgh Review*; he continued to publish economic articles there until 1837. On McCulloch's relationship with the *Edinburgh Review*, see D. P. O'Brien, J. R. McCulloch: *A Study in Classical Economics* (New York: Barnes and Noble, 1970), 34-42, and Fontana, *Rethinking the Politics*, chap. 2.

52. J. R. McCulloch, *The Principles of Political Economy: With a Sketch of the Rise and Progress of the Science* (Edinburgh: William and Charles Tait, 1825), 3. As I point out later, McCulloch's insistence that commerce plays a central role in distributing "the blessings of civilization" suggests this



A BRIEF IN-
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to keepe bookes of Accountts
after the order of *Debitor and*

B Creditor, & as well for propo-
* *Accomptis paritibus, &c.* *
By the three bookes nam-
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and of other necessaries appertaining
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augmented and set forth by *John Ma-*
ler Scholtenmaister. 1588.

OLECASTIC
Printed at London by
John Windet, dwelling at
the signe of the white Beare,
nigh Baynards
Coffin.

1588.

WA p. 743

Title page from John Mellis, *A Briefe Instruction and Manner How to Keepe Bookes of Accountts after the Order of Debitor and Creditor* (London: John Windet, 1588). Courtesy, The Bancroft Library.

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MARY POOVEY

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