Inventing Industrial Statistics

Michael Zakim[*]

This Article explores the success of the new science of statistics in establishing order within the pandemonium of industrial revolution in the nineteenth century. This success was based on the fact that the expanding circulation of both men and goods that characterized capitalism constituted the ontological foundation of statistics as well. In this respect, one can say that statistics turned variety and multiplicity into the basis of system, if not of uniformity.

The study focuses on the 1850 federal census of the United States and, more specifically, on the new taxonomy adopted in the census's manufacturing schedule for enumerating industrial activity. This taxonomy was organized around a single, universal threshold of capital investment applied to each enterprise, a criterion that replaced various systems applied in previous censuses, all of which were based on an a priori definition of what actually constituted production. The innovation of 1850 resulted in a far more extensive account of manufacturing and was consequently perceived to be a most effective means of measuring the dramatic expansion of the economy. In fact, this was accomplished by making money the rule of measure, and so redefining the essence of industry to be financial rather than material. Profit-making consequently achieved a scientific, and even neutral, status. As such, statistics can be said to have made an epistemological contribution to the legitimization of the new capitalist order.

I.

Statistics was an industrial invention, a new technology for generating knowledge about "a thousand subjects of national interest," as the *United States Democratic Review* explained in endorsing the creation of a federal

* Michael Zakim teaches history at Tel Aviv University.

bureau of statistics in 1844. The resulting information would "illuminate . . . the moral and the material working of our complex and novel system of institutions." Nahum Capen, writing to Congress a few years later, assigned statistics an even more significant role to play in systematizing "the rapid changes constantly taking place in our condition, the unyielding ambition of our people, the irregularity of enterprise, [and] the new and exciting temptations in prospects of wealth." Capen, a prominent member of the American Statistical Association, celebrated the new science's unique ability to introduce a measure of order, and even objective truth, into such irregular, exciting times. "The human mind dwells with satisfaction upon ascertained results," Joseph Kennedy declared in a lecture on the subject which he delivered before New York's Geographical and Statistical Society in 1859. "[It] finds true enjoyment in the contemplation of truths which evince a progressive knowledge respecting the real condition of the human family."[1]

Statistics assumed a central place in America's "true . . . knowledge" of its "real condition" in 1850. This is when the federal census, under Kennedy's supervision, made the individual rather than the household its fundamental unit of enumeration. Of course, census marshals had always counted the total number of persons residing in each "dwelling house." But these were never more than anonymous totals subdivided, at most, by age and sex. Only the household head was identified by name, and even that was largely for bureaucratic convenience. In principle, there was almost no personal information contained in the returns, since the census was established solely in order to determine the country's rates of taxation and representation. This meant that when 138 "interrogatories" were organized into six separate schedules (respectively surveying the free population, the slave population, mortality over the preceding year, agricultural holdings, manufacturing enterprises, and an expanding range of "social statistics") and were then posed to all Americans in 1850 — identifying everyone by name and assigning each an exclusive, personal column in the population blanks

---

1 George Tucker, *Progress of the United States in Population and Wealth in Fifty Years, as Exhibited by the Decennial Census*, 14 U.S. MAG. & DEMOCRATIC REV. 102, 102-03 (1844); Letter from Nahum Capen to John Davis (Mar. 3, 1849), *in* NAHUM CAPEN & JESSE CHICKERING, LETTERS ADDRESSED TO THE HON. JOHN DAVIS CONCERNING THE CENSUS OF 1849 BY NAHUM CAPEN AND JESSE CHICKERING. 30TH CONGRESS, 2D SESSION, SENATE MISCELLANEOUS NO. 64, at 4 (Washington, Tippin & Streeper 1849) [this volume hereinafter CAPEN & CHICKERING]; Joseph Kennedy, *The Origin and Progress of Statistics*, 2 J. AM. GEOGRAPHICAL & STAT. SOC'Y 92, 92 (1860).

— a regime change was in the offing.[2] The consequent plethora of detail was revealing of "the moral, physical, and pecuniary good of the people," as Nahum Capen continued in his missive to Congress. In thus assuming that the "good of the people" was to be discovered by interrogating persons rather than households, Capen gave pointed expression to a new conception of the political order, most famously characterized by Tocqueville's neologism from earlier in the decade, "individualism." "The history of each and every individual," as Joseph Kennedy himself declared in his New York lecture, was now the explicit subject of the census, which meant that the census had become the best means for grasping "the numbers and condition of the American people in all their relations."[3]

This Article will examine the statistical reinvention of the census and its transformation in 1850 into a form of knowledge for measuring and consequently normalizing an industrial reality that had destroyed the existing social order in America. Statistics, it will be argued, proved to be integral to government in the capitalist age, for it turned the variation and fluidity of market relations into the basis of system, if not of uniformity.

In fact, the 1850 census contained a separate schedule for counting the nation's "products of industry" that was based on no less dramatic a taxonomic breakthrough than that which informed the population schedule's new "mode of personal inquiry." The manufacturing returns were consequently able to satisfy such critics as Calvin Colton, who complained that political economy could never become a science in America as long as there were no "uniform propositions that applied to all places and all times," and Archibald Russell, who protested the absence of a "more solid and sure foundation" for studying the economy that could place "the superstructure of theory upon a basis of facts, not 'drawn from the imagination,' but the result of patient statistical investigation." The seventh (1850) census's account of industrial enterprise comprised an unprecedentedly rich view

---

2 The only exception to this universality was to be found in the individual listings regarding occupation, which were exclusively confined to males. However, by the following census, in 1860, the query was extended to both sexes; women's mass presence in the labor market could no longer be ignored. William C. Hunt, *The Federal Census of Occupations*, 86 AM. STAT. ASS'N (n.s.) 469 (1909).

3 CAPEN & CHICKERING, *supra* note 1, at 3; ALEXIS DE TOCQUEVILLE, DEMOCRACY IN AMERICA 506-08 (J.P. Mayer ed., George Lawrence trans., Anchor Books 1969) (1840); Kennedy, *supra* note 1, at 109. For details on the respective schedules see CARROLL D. WRIGHT, THE HISTORY AND GROWTH OF THE UNITED STATES CENSUS 39-50 (1900) [hereinafter WRIGHT, HISTORY OF THE CENSUS]. The 1850 census was the first "which really amounted to an attempt at scientific work." Carroll D. Wright, *Address*, 81 J. AM. STAT. ASS'N (n.s.) 1, 7 (1908) [hereinafter Wright, *Address*].

of economic life, in both its scope and system, coming after decades of self-admitted failure to effectively measure the nation's manufacturing activities. That achievement was made possible by a radical innovation in method, one that effectively turned the profit equation into the source of objective knowledge, or scientific neutrality. The new industrial statistics, as we shall see, made the commodity the crux of material life. As a result, money acquired an epistemological status, business logic was reified as universal truth, and profitable exchange became a neutral, if not natural, form of social intercourse.[4]

II.

Statistics rested on "a number of isolated facts," as the political economist Francis Lieber explained in 1836, "which thus isolated have little value for human experience."[5] Only after the facts were collected and classified would they then provide "a more positive knowledge of the real state of things," that is, would they then become statistics. In practical terms, this positive knowledge was created by cross-referencing one fact with another (and another, and then another), either over time (comparing, for instance, the number of persons residing in New York City in 1850 to the number of residents fifty years earlier), over space (by comparing the number of persons residing in New York City in 1850 to the number residing in Charleston that same year), or simultaneously over time and space (by comparing the change in the respective number of residents in New York City and Charleston over the preceding fifty years). The operative principle of the statistical project was simple: the greater the number and variety of facts that were collected, the greater the volume of subsequent comparisons that could be made, which would then yield a better knowledge of "the real state of things . . . in all their relations." That is why directing the new census queries to all members of the family offered such significant statistical advantages. Lemuel Shattuck, who had actually devised the new "mode of personal inquiry" for an 1845 census of the city of Boston, explained that "the facts obtained by the old method [were] too general to admit of any classification except the one originally made." That

---

4 PAUL K. CONKIN, PROPHETS OF PROSPERITY: AMERICA'S FIRST POLITICAL ECONOMISTS 189 (1980) (quoting Calvin Colton); ARCHIBALD RUSSELL, PRINCIPLES OF STATISTICAL INQUIRY 7 (New York, D. Appleton & Co. 1839).

5 FRANCIS LIEBER, MEMORIAL FROM FRANCIS LIEBER, S. DOC. NO. 24-314, at 3 (1st Sess. 1836). Lieber was quoted extensively in *The Approaching Census*, 5 U.S. DEMOCRATIC REV. 77, 77-85 (1839) [hearinafter *The Approaching Census*].

is to say, the lack of individuation in the older enumerations actually precluded the extrapolations and comparisons that now proved so effective in mapping the novel variation characteristic of modern social relations. "According to the [system] now used," Shattuck wrote in his *Report to the Committee of the City Council*, "many different classes of facts may be abstracted, possessing a greater or less degree of interest and importance."[6]

These "abstractions" constituted the heart of a system of knowledge that was, in fact, founded on the conditions of unknowability that prevailed in an industrializing society, where significant numbers of the population found themselves living outside the familiar networks of household and village. As Tocqueville noted in his discussion of individualism, "the woof of time is ever being broken and the track of past generations lost" in democratic America: "Those who have gone before are easily forgotten, and no one gives a thought to those who will follow." Jesse Chickering, another leading figure in Boston's American Statistical Association, similarly wrote to Lemuel Shattuck in 1844 about his frustrations in trying to document Massachusetts's contribution to the settlement of the American frontier. Had there been an effective system of birth and domicile registration over the last fifty years, Chickering lamented, "we might deduce from it a near approximation to the number of these emigrants" who had left their native state for other regions of the country. In the absence of such figures, nothing could be definitively known about either the extent or the complexion of the great movements of population so characteristic of life in the republic. Americans, in short, required new sources of collective memory — indeed, new sources of commonality — that would be consonant with the unfixed circumstances of their free society.[7]

Statistics was such a source. It made variety and multiplicity into the basis of system, if not of uniformity. The axiomatic proliferation of goods and relations in industrial society, in fact, constituted its very ontology, as well as the practical subjects of its enumerations. And so, too, the newly statisticized

---

6 LEMUEL SHATTUCK, REPORT TO THE COMMITTEE OF THE CITY COUNCIL APPOINTED TO OBTAIN CENSUS OF BOSTON FOR THE YEAR 1845, at 18, 36 (Boston, J.H. Eastburn 1846) [hereinafter SHATTUCK, REPORT]. On a parallel rise in the importance of local histories and genealogies see *Lemuel Shattuck*, *in* 3 MEMORIAL BIOGRAPHIES OF THE NEW ENGLAND HISTORIC GENEALOGICAL SOCIETY 290 (Boston, Genealogical Society 1883).

7 DE TOCQUEVILLE, *supra* note 3, at 507; SHELDON S. WOLIN, TOCQUEVILLE BETWEEN TWO WORLDS: THE MAKING OF A POLITICAL AND THEORETICAL LIFE 226 (2001); Letter from Jesse Chickering to Lemuel Shattuck (Feb. 5, 1844) (on file with Massachusetts Historical Society, Lemuel Shattuck Papers, box 1).

census could offer an effective substitute for the disintegrating hierarchies and collectivities of an agrarian regime taking its last breaths. Chickering himself successfully lobbied for inclusion of a query in the 1850 census that would ascertain each person's "place of birth," and would consequently allow interested observers to trace the migration of Americans from state to state as well as the immigration of those arriving from foreign lands. Statistical knowledge, in other words, no longer depended on familiarity — which was an increasingly impractical aim anyway — but on its opposite: "It is only out of the combination of the whole that the national value of the detailed observations . . . can proceed," the *United States Magazine and Democratic Review* explained in 1839 in an essay promoting the census's metamorphosis into a statistical tool. This, it argued, was the true meaning of the nation's motto *e pluribus unum*. That had not always been the case. "Little information was sufficient to provide for the wants and exigencies of the community [in] a nation composed of wood-cutters and farmers," as the *North American Review* observed of governance in the early republic. But divisions of labor had since separated the citizenry "into so many classes," transforming the nature of public life and generating a need for greater amounts of information. "The people themselves," as the *Review* now declared, "by knowing more of each other's and the public's affairs, gradually shed their local antipathies and prejudices, till mutual interest and affection spring from acquaintance, and in time ripen into a steady and durable patriotism." Statistics thus addressed the atomization of industrial life by turning such problems into their own solution, that is, by establishing community on the basis of an anonymous whole.[8]

A civic order resting on personal mobility and the individual ambition that drove it had actually reversed the traditional conditions of political life. Society was no longer that which bound citizens together in *a priori* fashion. Rather, it now became incumbent upon the citizenry to actively forge their own bonds. Statistics was integral to their efforts, dedicated as it was to generalizing from the particular, and vice versa, and consequently forging a novel relationship between the individual and the universal, the twin foundations of liberalism that were also often at odds with each other. Statistics, what's more, pursued the creation of a durable polity without reverting to traditional notions of stability. It was not intimidated, in other

---

8 *The Approaching Census*, *supra* note 5, at 81; PATRICIA CLINE COHEN, A CALCULATING PEOPLE: THE SPREAD OF NUMERACY IN EARLY AMERICA 164-65 (1982) (quoting the *North American Review*). *See generally, The Seventh United States Census*, 34 HUNT'S MERCHANT'S MAG. 166 (1856).

words, by the tendency of market society to make the value of everything permanently relative. Being born of comparisons, statistical truth was relative by nature, and so it was philosophically consistent with both a democratic polity and a capitalist economy that promoted self-possession into an inalienable right and consequently dispersed sovereignty over all of society. And while such individualism seemed to then subvert the very possibility of establishing such a thing as absolute truth, statistics responded by presenting a coherent and synthetic picture of social life that nevertheless rested on the growing mass of individuals. This was not a vision of community born of some objective "view from nowhere," which necessarily obscured or suppressed the great variety of subjective experience. If anything, the opposite was the case. Statistics acknowledged the particularities of private lives, as was manifest in the census's ever-growing number of personal interrogatories.[9]

At the same time, the census returned an image of society that was otherwise imperceptible to the individual himself. "The comparative fecundity and mortality . . . as influenced by the different circumstances of location, climate, occupation, degrees of prosperity, &c." was just one example of a social reality that remained inaccessible to the private citizen until the vast amount of discrete personal information had been collected and statistically organized. The implications were at once alarming and encouraging. On the one hand, it was evident that individual experience was becoming increasingly removed from social experience: no one could personally comprehend the multifarious nature of one's civic relations. Community was an "abstraction," in other words, rather than a lived event (based on one's "senses"). A most significant gap was emerging between subjective and objective reality. On the other hand, contemporary anxieties provoked by the innumerable subjectivities all accorded equal status in an age of individual freedom could be assuaged, for society proved to be constituted of more than a random collection of private desires and opinions. Statistics showed, in fact, that individual lives unfolded within an identifiable, observable, and tangible social order. Edward Jarvis, a physician and pioneer of medical statistics, even contended that individuality only became intelligible after being statistically ordered. In an essay reviewing recently

---

9 *See generally* Bruno Latour, *The Powers of Association*, *in* POWER, ACTION AND BELIEF: A NEW SOCIOLOGY OF KNOWLEDGE? 264, 276-77 (John Law ed., 1986); GEORG SIMMEL, THE PHILOSOPHY OF MONEY 116-17 (David Frisby ed., 1990); PAM MORRIS, REALISM 64-66 (2003); Hayden White, *The Problem of Style in Realistic Representation: Marx and Flaubert*, *in* THE CONCEPT OF STYLE 213, 213-14 (Berel Lang ed., 1979).

published "vital statistics" of births, deaths, and marriages, Jarvis observed that "such public and permanent records concerning every individual [meant] that he may be able to establish his identity, his personality, and his relation to others; and also that the public authorities may be able to describe and to trace him." Without such a general grammar, in other words, the citizens of a large republic would find it difficult to recognize each other, let alone talk sensibly and authoritatively about such essential subjects of liberal government as political representation, economic competition, moral emulation, and self-improvement.[10]

Indeed, the statistical goal of generating commonality out of innumerable individualities matched the American understanding of popular sovereignty as a government simultaneously of all and of each. And while many republicans had resisted early attempts to use the census to collect statistics, for fear of government abuse of the resulting information — James Madison's proposal to include a query on occupation in 1790, for instance, was flatly rejected by the Senate — the opposite argument was now increasingly being made, namely, that statistics was a means of ensuring that government remained in the hands of the people. A congressional report in 1844 thus justified the creation of a federal bureau of statistics by arguing that political oppression was the result of laws enacted upon "partial and imperfect information." Such partiality invariably favored the narrow interests of this class or that. But because government in the United States was to benefit "the *mass* of the people," then legislative action should likewise be informed by knowledge concerning "*every interest* and *every class* of the community." Giving equal expression to each and every interest was now the crux of democracy, and so government's role in organizing information became essential to civic life. Archibald Russell accordingly wrote in his *Principles of Statistical Inquiry* (1839) that "the investigation proceeds from no party feeling," and that was because "all interests, commercial and manufacturing, agricultural and professional, are alike to be represented." It

---

10 Letter from Nahum Capen to John Davis, *supra* note 1; THEODORE M. PORTER, THE RISE OF STATISTICAL THINKING 1820-1900, at 25, 57 (1986); *Glances at Our Moral and Social Statistics*, HARPER'S WEEKLY, Feb. 1855, at 334; C.B. MCPHERSON, THE POLITICAL THEORY OF POSSESSIVE INDIVIDUALISM: HOBBES TO LOCKE 80 (1962); Edward Jarvis, Review of Works on Vital Statistics, AM. J. MED. SCI., July 1852, at 150. *See generally* NIKOLAS ROSE, INVENTING OUR SELVES: PSYCHOLOGY, POWER, AND PERSONHOOD 19, 26, 152 (1996); MARY POOVEY, A HISTORY OF THE MODERN FACT 147-50, 156, 256-57 (1998); Peter Miller & Ted O'Leary, *Accounting and the Construction of the Governable Person*, 12 ACCT. ORGS. & SOC'Y 235, 243 (1987).

thus proved imperative for the republic to organize an ambitious statistical project capable of encompassing "the absolute and relative condition of every interest, the amount of every source of revenue, and every object of expenditure, . . . and every question . . . ." Only then, with "knowledge of the most important kind . . . given to the community," would society truly be capable of governing itself.[11]

Americans considered Sir John Sinclair, the author of a *Statistical Account of Scotland* (1791-99), to be the first to understand the civic nature of statistics, the first, that is, to inquire into the entire fabric of social relations rather than simply to measure "the political strength of a country." Sinclair's statistics were thus favorably compared to an earlier tradition of English "political arithmetic" that had already devised mortality tables and calculated life expectancies in the seventeenth century, and had likewise done so in response to political crisis and the weakening of traditional structures of authority. But political arithmetic considered the resulting information to be a state secret, organized with the sole intent of helping to reconstitute the prince's power in an age of mercantile economics and authoritarian government. The state was, in other words, to enjoy an exclusive monopoly over the truth. The apprehensions of eighteenth-century republicans regarding abuses of the newly instituted census, it turns out, were not without cause. Sinclair, by contrast, devoted his quantifications to discovering "the degree of happiness [society] actually enjoys," which he then accordingly published with the goal of making this knowledge available to the general reading public. That is why his statistics constituted no less than "a new branch of politics." The public use of such information not only

---

11 PRATT, REPORT ON BUREAU OF STATISTICS AND COMMERCE, H.R. REP. NO. 28-301, at 3, 3 (1st Sess. 1844). The need "of understanding as clearly and fully as possible the composition of the social forces which, so far, Governments have been assumed to control, but which now, most men agree, really control Governments." Or: "Men are gradually finding out that all attempts at making or administering laws which do not rest upon an accurate view of the social circumstances of the case, are neither more nor less than the imposture in one of its most gigantic and perilous forms." RUSSELL, *supra* note 4, at 10-11. For more on the relationship between government and statistics see *Some Observations on the Present Position of Statistical Inquiry, with Suggestions for Improving the Organization and Efficiency of the International Statistical Congress*, 23 J. STAT. SOC'Y LONDON 362, 363 (1860); *see also* Franklin Hough, *Census Systems of Civilized Nations*, 38 HUNT'S MERCHANT'S MAG. 54, 54-59 (1857); *Statistics of the United States*, 10 HUNT'S MERCHANT'S MAG. 351 (1844); *Bureau of Statistics*, 12 HUNT'S MERCHANT'S MAG. 363 (1845). *See generally* OZ FRANKEL, STATES OF INQUIRY: SOCIAL INVESTIGATIONS AND PRINT CULTURE IN NINETEENTH-CENTURY BRITAIN AND THE UNITED STATES (2006).

signaled the end of political absolutism, but of philosophical absolutism as well, for knowledge about society was now firmly ensconced within quotidian experience instead of being accorded a metaphysical status resting on a higher authority. Truth "is itself part of reality and life," as Durkheim observed in an essay on the "Sociology of Knowledge," reconstituted as a human creation — and a practical interest — that at once transcended any individual set of beliefs — just like statistics.[12]

And so, Archibald Russell justified his proposals for an ambitious national census by referring to Sinclair's success in according civic society a central place in the modern statistical project. "The social condition of a country is of more vital importance than its political, as the maintenance of peace and good order depends more upon the former than on the latter," Russell wrote in his *Principles of Statistical Inquiry*. Franklin Hough likewise observed in a survey of "Census Systems of Civilized Nations" that appeared in *Hunt's Merchant's Magazine* in 1858 that,

> a country is rich and powerful that contains, not the greatest sums of hoarded or invested wealth, but the greatest number of happy families; not the heaviest armaments and costliest array of defenses against foreign invasion, but the greatest number of intelligent and industrious home and country-loving citizens, who, knowing the value of domestic happiness, and of civil and religious liberty, from their enjoyments, are ready to yield their lives and fortunes in their defense.

Statistics now moved far beyond its etymological roots. It became driven, instead, by a recognizably liberal "concern of man in man," rather than the desiderata of state power. That is why, as the *Democratic Review* similarly commented, there are a "great many subjects on which it would be in a very high degree interesting and valuable to make a general statistical observation . . . which are not proper subjects of legislation at all." These subjects constituted an inventory of civic life — of "knowing all about everything" — that included newspapers, benevolent associations, the fine arts, public health, husbandry, manufacturing, the mechanical arts, commerce, stocks

---

12 David Eastwood, *"Amplifying the Province of the Legislature": The Flow of Information and the English State in the Early Nineteenth Century*, 62 HIST. RES. 276, 288-89 (1989) (quoting John Sinclair); RUSSELL, *supra* note 4, at 2; JAMES GARFIELD, REPORT, H.R. REP. NO. 41-3, at 8 (2d Sess. 1870); EMILE DURKHEIM, *Sociology of Knowledge*, *in* SELECTED WRITINGS 250, 251-52 (Anthony Giddens ed., 1972); Peter Buck, *Seventeenth-Century Political Arithmetic: Civil Strife and Vital Statistics*, 68 ISIS 67, 73-74 (1977); *see also* Peter Buck, *People Who Counted: Political Arithmetic in the Eighteenth Century*, 73 ISIS 28 (1982).

and banking, internal communications, education, crime, social life, religion, and political organizations. All were explicitly grouped under the popular rubric of "useful knowledge" and were, thus, by definition, designed to circulate freely among the public. That is what made it possible to also claim that the new statistical census constituted a "neutral ground on which all parties may cordially meet, without the intrusion of any of the disturbing influences of interest or feeling which must bias the judgment . . . on almost every other conceivable subject of a public nature."[13]

III.

James Madison recognized that the newly constituted national census provided "an opportunity of obtaining the most useful information." Nothing was more useful, he deemed in 1790, than discovering the occupations of citizens, essential knowledge in any systematic discussion of the relationship between wealth and public happiness, particularly so in light of Madison's own views regarding the role of factions in political life and the structural tensions that invariably characterized the interaction between "a landed interest, a manufacturing interest, a mercantile interest, a moneyed interest, [and] many lesser interests." But while Congress embraced several of Madison's other suggestions for making the first census into more than the simple body count mandated by the Constitution — for instance, by personally identifying the head of each family by name, and by distinguishing not only between slave and free, but between whites and "all other free persons" — the proposed query regarding occupation was rejected. Madison consequently wrote to Jefferson, reporting that his opponents considered his program to be "a waste of trouble" that would at best "[supply] materials for idle people to make a book." The sarcasm also alluded to the political

---

13 RUSSELL, *supra* note 4, at 1, 10-11; Hough, *supra* note 11, at 59; H.R. REP. NO. 41-3, at 9 (discussing the "concern of man in man"); *The Approaching Census*, *supra* note 5, at 77, 80; Untitled, DAILY NAT'L INTELLIGENCER, Nov. 20, 1850; Adam Smith: "Every single piece [of society] had a principle of motion of its own altogether different from that which the legislature might choose to impress upon it." THOMAS L. HASKELL, THE AUTHORITY OF EXPERTS: STUDIES IN HISTORY AND THEORY 31 (1984) (quoting Adam Smith). On "useful knowledge" and statistics see PORTER, *supra* note 10, at 56; H.R. REP. NO. 28-301, at 1-3; COHEN, *supra* note 8, at 154-56; JAMES H. CASSEDY, DEMOGRAPHY IN EARLY AMERICA: BEGINNINGS OF THE STATISTICAL MIND, 1600-1800, at 215-16 (1969); Robert C. Davis, *The Beginnings of American Social Research*, *in* NINETEENTH-CENTURY AMERICAN SCIENCE: A REAPPRAISAL 152, 154-55 (George H. Daniels ed., 1972).

fears of republicans ever on their guard against the corrupting potential of concentrating so much information in the hands of rulers. The dangers, in other words, outweighed any benefits to be derived from knowing "in what proportion to distribute the benefits resulting from an efficient General Government." Jefferson himself became involved in a similar effort when, a decade later, in his capacity as president of the American Philosophical Society, he attached his name to a memorial to Congress calling for "the promotion of useful knowledge." That would include Madison's proposal of a census query on occupation in the upcoming enumeration of 1800. The Philosophical Society, together with a similar petition submitted to Congress by the Connecticut Academy of Arts and Sciences, also endorsed the introduction of age categories to the census's returns of the "free white" population, essential as they were in constructing more reliable life expectancy tables. The occupational statistics were also to be more elaborate than anything proposed before, organized into nine types that consisted of the learned professions, merchants and traders (including bankers, insurers, brokers, and "dealers of every kind"), mariners, handicraftsmen, laborers in agriculture, laborers of other descriptions, domestic servants, paupers, and "persons of no particular calling living on their income." The Philosophical Society also emphasized the importance of assigning each citizen only one occupation, so that he appear "but once in this table," a rule that made statistical sense but was difficult to satisfy in an agrarian world whose divisions of labor remained tentative and porous. Such structural challenges proved immaterial anyway, as this attempt to make the census into a factual source of information regarding the political economy was again rejected for a second time.[14]

Such opposition had weakened by 1810. The third federal census, the first to mandate personal visits by officials to each household as the government divided the country into formal enumeration districts, included a "Digest of Manufactures." Madison, of course, was now president of the United States. But the impetus for employing the census to survey economic activity was the trade embargo and the official policy of encouraging domestic

---

14 James Madison, Untitled, *in* 1 ANNALS OF CONG. 1115, 1145-47 (Joseph Gales ed., 1790); THE FEDERALIST NO. 10, at 56 (James Madison) (Edward M. Earle ed., 1937); Census, Communicated to the Senate, January 23, 1800, *in* 1 AMERICAN STATE PAPERS: MISCELLANEOUS 202-03 (1800); Davis, *supra* note 13, at 154-56; CASSEDY, *supra* note 13, at 215-20; COHEN, *supra* note 8, at 161-64. Taxation was based on population figures because the land census originally mandated by the Articles of Confederation was never undertaken. MARGO J. ANDERSON, THE AMERICAN CENSUS 11-12 (1990).

manufactures that would supply substitutes for unavailable foreign goods. Tench Coxe, a former assistant secretary of the Treasury who had made an important contribution to Hamilton's *Report on Manufactures* (1791), now declared in his *Statement of the Arts and Manufactures of the United States of America* (1813) — which was commissioned by the Treasury Department to summarize the new census figures — that "very useful data" had been collected which allowed for comparisons to be made between the value of internal commerce (and American-made goods) and external, or foreign trade. Coxe also presented "much elucidation of the operations of manufacturing industry upon the commercial and the landed interests, and upon the public safety." And yet, his account of the nation's industries was a largely *ad hoc* affair. Congressional authorization for including an enumeration of manufactures in the census had come late since it was not a part of the regular census bill. Nor were marshals and their assistants in the field, again in contrast to the population schedule, supplied with a formal set of interrogatories pertaining to industrial subjects. Instead, each would be guided, as he best understood, by Congress's general remarks regarding the importance of knowing the kind, quantity, and value of goods being produced in each census district, together with instructions to record the total number of manufacturing establishments in operation and their respective use, or nonuse, of machinery. Citizens were also not legally bound to respond to interrogatories concerning their manufacturing activities, in contrast to the threat of fines for those who refused to answer population queries. Nor was the government required to publish the results. That would be left to the discretion of the Secretary of the Treasury, who ultimately and, some claimed, reluctantly, directed Coxe to issue a report. The returns were later deemed so "imperfect" by observers that, in order to actually produce a coherent digest based on them, as the *North American Review* complained a few years later, Coxe "was obliged to fill so many chasms by objecture and deduction." Historians have since discovered that over half of the totals reported by Coxe in regard to the value of products were not to be found in the returns at all, but were based on Coxe's own separate estimates.[15]

And yet, a precedent had been set and a systematic body of economic

---

15 ANDERSON, *supra* note 14, at 18-19; JACOB E. COOKE, TENCH COXE AND THE EARLY REPUBLIC 497-502 (1978); TENCH COXE, A STATEMENT OF THE ARTS AND MANUFACTURES OF THE UNITED STATES OF AMERICA, FOR THE YEAR 1810: DIGESTED AND PREPARED BY TENCH COXE, at xxvii (Philadelphia, A. Cornman 1814) [hereinafter COXE, ARTS AND MANUFACTURES]. The digest was anticipated by TENCH COXE, ESSAY ON THE MANUFACTURING INTEREST OF THE UNITED STATES (Philadelphia, Bartholomew Graves 1804); *Manufactures*, *in* THE FEDERAL CENSUS:

information had been created by the government by means of its extensive census apparatus. In fact, this dramatic expansion of the purview of the third census, while addressing the nation's material needs of the hour, was also part of a developing American statistical project that, in addition to Coxe's *Statement of the Arts and Manufactures*, included Adam Seybert's *Statistical Annals* (1818), Timothy Pitkin's *Statistical View of the Commerce of the United States* (1816), Timothy Dwight's *Statistical Account of the City of New-Haven* (1811), and Samuel Blodget's *Economica: A Statistical Manual for the United States of America* (1806). This cohering corpus of works were testimony to the growing popular interest in statistics, as well as to the primitive condition of such efforts. Seybert, for instance, whose 800-page *Annals* was based in large part on the data collected by various federal authorities, including the census, found himself, thirty years after Madison's original proposal, still expostulating on the critical need for information regarding the professions and trades, "a most useful fact" that remained unknown even though "[it] will throw more light upon the actual state of our economy, than any other." In a review of Seybert's book that appeared in 1819, on the eve of the fourth federal census, the *North American Review* expanded his claims and argued that the nation's "productiveness or modes of making profit" should now become the subject of systematic measurement. The country required an economic statistics that would move beyond agrarian subjects and offer "an account of all . . . capital," that would, in other words, reveal the sundry ways by which the citizenry exercises its "mental and physical powers" in pursuit of economic goals.[16]

This seems to have happened in 1820, when the census finally incorporated Madison's original proposal for an occupational category, albeit considerably less detailed than he had wanted, while warning assistant marshals in the field that "the discrimination between persons engaged in agriculture, commerce, and manufactures, will not be without its difficulties [since] no inconsiderable

---

CRITICAL ESSAYS BY MEMBERS OF THE AMERICAN ECONOMIC ASSOCIATION 259 (New York, Macmillan Co. 1899); Untitled, 9 N. AM. REV. 217, 221 (1819).

16 ADAM SEYBERT, STATISTICAL ANNALS 217-21 (Philadelphia, Thomas Dobson & Son 1818); TIMOTHY DWIGHT, A STATISTICAL ACCOUNT OF THE CITY OF NEW-HAVEN (New Haven, Walter & Steele 1811); TIMOTHY PITKIN, A STATISTICAL VIEW OF THE COMMERCE OF THE UNITED STATES (Hartford, Charles Hosmer 1816); SAMUEL BLODGET, ECONOMICA: A STATISTICAL MANUAL FOR THE UNITED STATES OF AMERICA (Washington DC, Samuel Blodget 1806); *see also* D.B. WARDEN, A STATISTICAL, POLITICAL, AND HISTORICAL ACCOUNT OF THE UNITED STATES OF NORTH AMERICA (Edinburgh, n. pub. 1819); Untitled, 9 N. AM. REV. 221 (1819).

portion of the population . . . will answer to all three." In addition to this new "labor" data, the 1820 census also introduced far greater system into the manufacturing schedule in an effort to improve on the haphazard precedent from the previous decade. Fourteen standard queries were formulated and incorporated in the formal instructions sent out from Washington. They respectively inquired into the quantities, costs, and types of raw material used by each manufacturing enterprise, the number and sex of its hired labor, the type of machinery in use, "expenditures" (which principally meant capital investment and labor expenses), as well as a description, and the estimated value, of the enterprise's finished product. Household production was explicitly excluded from the census's manufacturing schedule since "it seems fairly deducible" that family manufactures were an "incidental" activity. They should not be categorized as a "profession," in other words, because they were not what defined "the class of society to which such individual belongs," a distinction consistent with the new occupation category that likewise disallowed anyone from being both a farmer and a manufacturer, for fear of hopelessly skewing the statistical record of society's division of labor. As such, household manufacturing was not accorded the status of manufactures in the new industrial economy.

Once a standard roster of interrogatories was created it became possible to pose identical questions to all enterprises, which then made it possible to generate a comparable — comparisons, of course, being the crux of the statistical project — abstract of the assets and expenditures of all of the nation's manufacturing establishments. In a further attempt at systematization, the census office printed an alphabetical catalogue of the specific branches of manufacturing that were to be included in the industrial schedule. The list was ambitiously extensive but not binding, for officials acknowledged the great variation of industrial activity encountered throughout the country, a diversity that could not be exhaustively anticipated in any single set of official instructions. As such, the list was "intended merely to give a direction to inquires, and each will add to it every manufacture not included in it and of which he takes an account within his division." Whether the inventory was followed to the letter or revised at the personal discretion of the agent in the field the consequent returns were, in fact, no less partial and arbitrary than the figures collected in 1810. The same inventory of textile, metal, leather, soap, glass, and ship-building that constituted the heart of the traditional mercantilist production economy was returned in the 1820 schedule as well. In this respect, the systematic innovations introduced into the fourth census still could not properly be described as statistical, for they continued to count what was already known rather than discover a new reality beneath the "arithmetical exterior." These were, as Joseph Kennedy

later acknowledged, still closed systems informed by ideological habits that were no better than "diversions and illusions."[17]

In fact, all the early American censuses of industry rested on the same principles that had informed Hamilton's monumental *Report on Manufactures* in 1791, devoted as it was, in Hamilton's words, "to the means of promoting such as will tend to render the United States independent of foreign nations." These were the traditional tenets of mercantile government and moral economy, a premeditated determination of the relative importance of this or that productive activity to the commonwealth. The essential contribution of textiles to the republic's economy, for example, was never in question. The contributions of upholsterers to the same, on the other hand, were far less obvious. Such hierarchies then guided the collection of the facts that were to be developed into knowledge of the economy, for upholstering was nowhere to be found in the consequent national record of manufacturing. The stated goal of the industrial schedule of 1810 might have been to discover "the actual condition of manufactures" in the country at large, but, in fact, this referred solely to those branches of industry that were capable of replacing embargoed imports with domestically-produced goods, or to those enterprises considered essential for settlement in the west. As a result, "shoes, boots, saddles, bridles, harness, fur and wool hats, common smiths work, knit stockings, the making of garments in shops and families, manufactures of wool, soap, candles, potash, wares of metal (except iron) watches and clocks, and various other things actually made, are omitted," and that was because they had never been a part of the import economy to begin with. And so, too, while the census of 1820 was far more rationalized and detailed than its predecessor, it nevertheless reproduced conventional knowledge. As Lemuel Shattuck had observed of previous population counts in his report on the Boston census of 1845, "the facts obtained by the old method . . . are too general to admit of any classification except the one originally made."[18]

---

17 For the interrogatories see WRIGHT, HISTORY OF THE CENSUS *supra* note 3, at 135, 309. A sizable percentage of Massachusetts farmers, for instance, continued to practice crafts and professions in these years. WINIFRED BARR ROTHENBERG, FROM MARKET-PLACES TO A MARKET ECONOMY: THE TRANSFORMATION OF RURAL MASSACHUSETTS, 1750-1850, at 118 (1991). Instructions are quoted in SEC'Y OF STATE, DIGEST OF ACCOUNTS OF MANUFACTURING ESTABLISHMENTS (Washington DC, Gales & Seaton 1823); Kennedy, *supra* note 1, at 92.

18 Alexander Hamilton, *Report on Manufactures*, *in* ANNALS OF CONG. 971, 1018-34 (1791); COXE, ARTS AND MANUFACTURES, *supra* note 15, vii, xxvii; WRIGHT, HISTORY OF THE CENSUS, *supra* note 3, at 135; RUSSELL, *supra* note 4, at 52-58; Kennedy, *supra* note 1, at 94; *see also* DWIGHT, *supra* note 16, vi-xi; 3 WARDEN,

Contemporaries were not unaware of these problems. The country's fifth census of 1830, for instance, contained no manufacturing schedule at all. This was not because of an anti-statistical backlash. The census's age classifications, for instance, were significantly elaborated and a series of "vital statistics" of the deaf, dumb, and blind were incorporated in the official enumeration for the first time. Preprinted forms were also introduced, assistant marshals having heretofore ruled their own blanks by hand. And the published returns now included tables that compared the new data with those from previous decades. But Congressional lawmakers responsible for organizing the decennial census nevertheless considered the survey of manufacturing to be impractical. That, of course, only served to spur a new wave of initiatives at the state level. New York, for instance, carried out an investigation of industrial activity in its census of 1835 which recorded the values of raw materials and finished articles in twenty specified branches of manufacturing. In Massachusetts, too, "statistical information in relation to certain branches of industry" was collected in 1837 by town assessors working with a prepared roster of industries and with a separate list of interrogatories for each type of manufacturing. The returns were published the following year. In 1831 Congress itself ordered that a survey of the nation's industries be undertaken, one eventually named after Secretary of the Treasury McLane, but this was a nakedly pro-tariff initiative restricted to only the relevant industries and thus directly reminiscent of the practice in 1810.[19]

These same years witnessed further developments in the social and institutional history of statistics in the United States. The American Statistical

---

supra note 16, at 264-71; PITKIN, *supra* note 16, at 56-73; ALAIN DESROSIERES, THE POLITICS OF LARGE NUMBERS: A HISTORY OF STATISTICAL REASONING 238 (2002); SHATTUCK, REPORT, *supra* note 6, at 18.

19 MESSAGE FROM JOHN QUINCY ADAMS, SEC'Y OF STATE, H.R. DOC. NO. 17-90 (2d Sess. 1823); H.R. DOC. NO. 22-4 (1st Sess. 1838); Edward C. Lunt, *History of the United States Census*, 1 PUBLICATIONS AM. STAT. ASS'N 79 (1888); WRIGHT, HISTORY OF THE CENSUS, *supra* note 3, at 131; COOKE, *supra* note 15, at 259-60; J.H. Middleton, *Growth of the New York State Census*, 71 J. AM. STAT. ASS'N (n.s.) 293, 296-97 (1905); JOHN P. BIGELOW, STATISTICAL TABLES: EXHIBITING THE CONDITION AND PRODUCTS OF CERTAIN BRANCHES OF INDUSTRY IN MASSACHUSETTS, at iii-viii (Boston, Dutton & Wentworth 1838). "We want statistics [collected on manufactures] to show how great a market manufacturers provide for agriculture." Letter from J.B. Wakeman to John Davis (Feb. 18, 1839) (on file with Massachusetts Historical Society, Davis Papers, box 2, folder 2); *see also The Comparative Importance of Agriculture, Commerce, and Manufactures*, 1 HUNT'S MERCHANT'S MAG. 480 (1839).

Society was founded in Boston in 1839, directly inspired by the creation of the Manchester Statistical Society four years earlier in England. Archibald Russell's *Principles of Statistical Inquiry*, arguably "the first book-length discussion of social research methodology published in the United States," appeared that same year, devoted as it was to advancing proposals for "the Census to be taken in 1840," as its subtitle announced. A concerted campaign on behalf of the creation of a permanent statistical office in the federal government was also undertaken, and the study of statistics was included for the first time in the academic curriculum of several universities. More generally, an increasingly articulate ideological program took shape that sought to make statistics a central tool of government — or what we would call today governmentality — most explicitly in a series of sharp polemics published in these years in the *United States Democratic Review*. Martin Van Buren gave direct expression to such thinking in his presidential address of 1838 when he explicitly endorsed proposals to turn the federal census into a statistical digest.[20]

That is why the next census in 1840 offered a thorough revision, if not redefinition, of the very purpose of the decennial enumeration. Statistical positivism now firmly converged with reformist anxieties about the cohesion of an energetic, expansive society in the throes of Panic and economic downturn. The result was the first full-fledged and unabashed attempt to thoroughly gauge the contours of social life in the republic. The number of occupational categories was increased and the population schedule expanded to seventy-four columns. A query on war pensioners was introduced. Educational institutions were surveyed and literacy was measured. The number of children attending school in the United States, for instance, became known for the first time. The earlier interest in vital statistics was likewise developed, principally by making insanity and its subcategory of idiocy a subject of inquiry. Most significantly, the census was now to be used to collect "all such information in relation to mines, agriculture, commerce, [and] manufactures . . . as will exhibit a full view of the pursuits, industry, education, and resources of the country." This emphasis on inventorying the nation's material assets subsequently led Jesse Chickering to observe that while the population had constituted the chief focus of decennial surveys until 1830, the focus of investigation had fundamentally shifted in 1840. The subject of "wealth" was now to be found at the heart of the census project.[21]

---

20 Theodore M. Porter, *Economics and the History of Measurement*, *in* THE VALUES OF PRECISION 173 (M. Norton Wise ed., 1995).

21 COHEN, *supra* note 8, at 175-204; "all such information . . ." in WRIGHT, HISTORY OF

And yet, the whole thing was soon dismissed as a debacle. The 1840 returns were considered to be so flawed that even the American Statistical Association announced its formal regret "that such documents," on whose behalf the Association had so strenuously lobbied, "have the sanction of Congress." This was, in part, a bureaucratic problem. The apparatus of census-taking had not been suitably revised to match the census's vastly extended program. This led to egregious discrepancies between the published tabulations and the raw data appearing in the manuscript returns sent in from the field, discrepancies that were the result of a lack of effective supervision in the Washington office where all the numbers were collated. The federal totals also diverged in unreasonable measure from the population counts returned by individual states in their own censuses. What's more, administrative incompetence meant that the numerous errors were allowed to stand, even after being exposed. Thus, for instance, as the American Statistical Association protested in a second memorial sent to Congress, thirty-five residents of Albany, New York had been identified by the new census as engaged in commercial employments, while in Troy, another Hudson Valley town half the size of Albany, the same category reached a total of 796. These were the kinds of mistakes that census office clerks were expected to uncover and then send back to the field for verification and correction, which they had not done. In fact, as the Statistical Association further observed, this was not just a technical flaw exacerbated by oversight or incompetence. The census had entirely failed to count retail merchants in innumerable instances, even though it was known that "every town in New England, and every county in the United States" hosted a retail trade.[22]

The missing numbers were indicative of the fact that assistant marshals still lacked effective taxonomic criteria to guide them in actually determining what, for instance, counted as a commercial occupation. The new census

---

THE CENSUS, *supra* note 3, at 36, 143; Nancy R. Folbre, *The Wealth of Patriarchs: Deerfield, Massachusetts, 1760-1840*, 16 J. INTERDISC. HIS. 213 (1985); Letter from Jesse Chickering to John Davis, *in* CAPEN & CHICKERING, *supra* note 1, at 21; Wright, *Address*, *supra* note 3, at 7; Davis, *supra* note 13, at 160; FRANCIS LIEBER, MEMORIAL FROM FRANCIS LIEBER, S. DOC. NO. 24-314 (1st Sess. 1836).

22 H.R. DOC. NO. 28-116 (2d Sess. 1815); JESSE CHICKERING, A STATISTICAL VIEW OF THE POPULATION OF MASSACHUSETTS, FROM 1765 TO 1840, at 111-60 (Boston, Charles C. Little & James Brown 1846). See *The Census*, 25 U.S. MAG. & DEMOCRATIC REV. 291, 292 (1849) on the political corruption in appointments; Letter from Jesse Chickering to John Davis, *in* CAPEN & CHICKERING, *supra* note 1, at 20; AM. STAT. ASS'N, MEMORIAL, S. DOC. NO. 28 (2d Sess. 1844); SHATTUCK, REPORT, *supra* note 6, at 7-16; Am. Stat. Ass'n, *Memorial of Errors Sent to Congress by the American Statistical Association*, 12 HUNT'S MERCHANT'S MAG. 125 (1845).

likewise failed to establish a universal, binding definition of what qualified as "manufactures," of what needed, in other words, to be included in a document that aspired to present a "full view" of the nation's industry. Borrowing from the precedent of 1820, a putatively exhaustive list of forty-five separate branches of industry was distributed to all marshals throughout the country. This detailed and highly varied roster of production categories nevertheless required the addition of a forty-sixth, miscellaneous category that was given over to "all other manufactures." Irregularities, in other words, remained inevitable since the census of industry continued to rely, to one extent or another, on the personal discretion of marshals and their assistants. In addition, each of the forty-five branches of production was assigned its own specific set of interrogatories. This was a practice first used in 1810 and then adopted by state manufacturing censuses in the 1830s. But by thus identifying those forty-five industries explicitly worthy of enumeration — an identification that rested on received wisdom regarding what constituted a manufacturing economy — and then designing queries for each in accordance to their known practices, the census returns became at once arbitrary and conventional. They were certainly unable to reflect the "rapid changes taking place in our condition" or the "irregularity of enterprise" that was deemed so characteristic of the times. Thus, for example, just as in 1810 and 1820, the country's garment industry, probably the single largest employer of waged labor in the country and the producer of one of America's most ubiquitous commodities, was entirely missing from the nation's official record of manufacturing enterprises. This is because traditional political economy identified the production of cloth, and not clothing, as that transformation of nature in which value was created. The conversion of those fabrics into garments was considered a commercial elaboration, at best, carried out by "merchant tailors" on the goods' way to market (analogous to the legion of retail merchants who also found no place in the 1840 census). And so, ultimately, the historical significance of this singular moment in the history of American statistics was to be found in the conclusion drawn by disappointed contemporaries, namely, that any serious attempt to survey the nation's industrial life would require a wholly new paradigm for counting.[23]

---

23 WRIGHT, HISTORY OF THE CENSUS, *supra* note 3, at 36, 144; John Cummings, *Statistical Work of the Federal Government of the United States*, *in* THE HISTORY OF STATISTICS 575, 672-74 (John Koren ed., 1918); SHATTUCK, REPORT, *supra* note 6, at 6-10.

IV.

That paradigm was created in 1850. Heartened by the House and Senate's acknowledgement of the systematic failures of the sixth census, the New York Historical Society and the American Statistical Association both called on Congress in 1848 in memorials respectively written by Archibald Russell and Lemuel Shattuck to mobilize expert opinion in preparing the upcoming seventh census (while also implicitly criticizing the placement of political appointees at the head of the census office). Such experts, or "statisticians," as they were now called, identified the census as

> a necessary means of showing, as nearly as possible, the exact personal condition of the people: their amount of vitality; their value of life; their capacity for labor, of production; and self-sustenance, and what progress has been made, and whether there be any obstacle to the advancement of human life which may be learned and overcome.

It was an ambitious vision, and an increasingly common one. In March, 1849 Congress established a new institution called the "Census Board," comprised of the Secretary of State, the Attorney General and the Postmaster General, which was assigned with designing the new census. Joseph Kennedy was appointed to be the Board's secretary, which meant that he effectively managed the project, assuming the position of superintending clerk of the census office once Congress approved the census bill itself in May 1850. Kennedy had no statistical background, but he assiduously enlisted the help of Lemuel Shattuck, Nahum Capen, Jesse Chickering, Edward Jarvis, and Archibald Russell in drafting the varied number of census schedules that were now considered essential to an effective national enumeration. Shattuck and Russell actually traveled to Washington as the Senate debated the new census proposal, maintaining constant contact with Kennedy and with John Davis, senator from Massachusetts (and member of the American Statistical Association) who had been instrumental in standardizing American weights and measures and whose amendment had actually created the Census Board the previous year. Meanwhile, the Senate established its own special committee on the census in an attempt to provide a counterbalance to the aggressive agenda of the Board.[24]

---

24 "Statistician" was a new word in NOAH WEBSTER, AN AMERICAN DICTIONARY OF THE ENGLISH LANGUAGE (New York, Harper 1845); JAMES GARFIELD, REPORT, H.R. REP. NO. 41-3, at 104 (2d Sess. 1870); GEORGE TUCKER, PROGRESS OF THE UNITED STATES IN POPULATION AND WEALTH IN FIFTY YEARS: AS EXHIBITED BY

Statisticians themselves were not of one mind over the design of the new schedules. Their differences were particularly pronounced over the measurement of industrial activity. In referring to the failures of 1840, for instance, Jesse Chickering emphatically wrote to Congress that "*it is better to have a few leading facts clearly and accurately ascertained, than to attempt a great number and obtain only loose returns*." Chickering argued that the statistical agenda of the sixth census was doomed by its lack of any "clear and definite" idea of what was to be counted. He pointed as an example to the failed attempt to quantify commercial activities. "What is meant by those employed in *commerce*?" Chickering asked. "Did it include the itinerant pedlar, the small retailer, or the wholesale merchant?" The failure to decide upon uniform definitions had led to the predictably sorry results that he had uncovered in Troy and Albany. In order to avoid such failures, Chickering concluded, it was necessary to standardize terms. And the best way to do that was by limiting the number of subjects to be interrogated by the census.[25]

Nahum Capen took issue with Chickering's proposal to reduce the scope of subjects included in the census's statistics. He argued that such a quantitative sacrifice would not lead to a qualitative improvement in accuracy, but would, in fact, have the opposite effect. "A work is generally executed with care," he argued, "according to the degree of its magnitude and importance." Capen was critical of the tendency "to reduce the objects of the census by making inquiries upon some subjects, and omitting others." This would

---

THE DECENNIAL CENSUS FROM 1790 TO 1840, WITH AN APPENDIX (Press of Hunt's Merchant's Magazine 1964) (1855); Paul J. FitzPatrick, *Statistical Societies in the United States in the Nineteenth Century*, 11 AM. STATISTICIAN 14 (1957); *Immigration to the United States*, 5 DEBOWS 243 (1848); Untitled, 12 HUNT'S MERCHANT'S MAG. 549, 549-51 (1845); Ottis Clark Skipper, *J.D.B. DeBow and the Seventh Census*, 22 LA. HIS. Q. 479 (1939); ANDERSON, *supra* note 14, at 35; J.D.B. DEBOW, STATISTICAL VIEW OF THE UNITED STATES 13 (Washington, A.O.P. Nicholson 1854); Letters from Archibald Russell to Lemuel Shattuck (Jan. 2, 9, 16, 24, Mar. 20, 1860) (on file with Massachusetts Historical Society, Lemuel Shattuck Papers, box 1).

The creation of the Census Board was part of a more general bureaucratic reform: the Department of Interior was established on the same day, and it now assumed responsibility — instead of the Department of State — for administering the federal census and publishing its results. WRIGHT, HISTORY OF THE CENSUS, *supra* note 3, at 39-41; Cummings, *supra* note 23, at 674; Davis, *supra* note 13, at 163-65. For details on the work of the Census Bureau, see W. STULL HOLT, THE BUREAU OF THE CENSUS 16 (1929).

25 Letter from Jesse Chickering to John Davis, *in* CAPEN & CHICKERING, *supra* note 1, at 19-30; *see also* RUSSELL, *supra* note 4, at 62-98.

constitute an arbitrary selection of subjects that would mar the statistical enterprise itself, undermining its inclusionary, nondiscriminating nature. He proposed, instead, to actually widen the scope of the census in order to bring statistical ambitions in line with the ever-growing number of subjects that constituted economic life in the industrial age. Capen thought that the best way to carry out such an expansion was by means of a system of multiple schedules, each with its own discrete set of queries specifically tailored to various branches of industry. That would simultaneously allow for improved accuracy through more searching and minute interrogations, without also sacrificing the establishment of standards.[26]

At this point, J.D.B. DeBow, editor of one of the country's most widely-read economic journals, joined the debate in a series of "letters" he published in the New Orleans *Daily Picayune* which were addressed to the Census Board in Washington. DeBow, who had taken part in the state census project in Louisiana and was destined to replace Joseph Kennedy as Superintendent of the federal census in 1854, recognized that the old paradigm by which census categories were based on existing hierarchies had lost its relevance once it was decided to make the census a tool of statistics. He exposed the circular nature of that system which "makes indispensable to the taking of the census the very information which the census itself can alone give!" What's more, DeBow argued, no amount of more specific definitions could resolve what was, in essence, an epistemological problem. But DeBow was more concerned with the political rather than the philosophical implications of this question. Inspired by a vision of southern industrialization, he was clearly troubled by Nahum Capen's proposal to institute a system of multiple manufacturing schedules. Such a plan, DeBow warned, would undermine the "rule of uniformity" that was essential to the statistical project, and which was no less essential to national unity, which could not be taken for granted in the current era of escalating sectional conflict. It followed that a universally applicable set of queries for the entire manufacturing economy was necessary in order to generate usable results which would be of general relevance. Designing separate schedules for separate economic sectors would be a self-realizing prophecy, DeBow argued, and would further divide the country into autonomous social units. Interrogatories regarding rice, cotton, and sugar cane, for instance, would be exclusively directed towards the South, even though traces of these crops were to be found in almost all the

---

26 Letter from Nahum Capen to John Davis, *in* CAPEN & CHICKERING, *supra* note 1, at 1-19. Capen's letter was privately printed, by Thomas Ritchie, and issued in pamphlet form.

states of the union. True, they might often still be in an infant condition in the North, DeBow conceded, but so was manufacturing in Massachusetts in 1790, which everyone now regretted for not having been included in the first census. Likewise, schedules devoted to counting industrial production would be restricted to Northern states. As a consequence, the census, originally intended as "the great common measure of our representative system," would become no less than a vehicle of disunion.[27]

The new plan ultimately adopted for the 1850 manufacturing schedule simultaneously incorporated Jesse Chickering's endorsement of a stricter definition of the subjects of inquiry, Nahum Capen's proposal to enlarge the scope of the census, and J.D.B. DeBow's argument on behalf of uniformity. The seventh census, in fact, was another great compromise of 1850 — another project for creating unity in a fragmenting reality — and a far more successful one than Henry Clay's attempt in the same year to preserve the slave republic. (The first significant changes in the structure of the seventh census's manufacturing schedule would only be made in 1880.) The census's new industrial taxonomy, "constructed on entirely different principles from any ever used previously for a like purpose," as Joseph Kennedy observed, rested on the lone instruction to census marshals to count every "corporation, company, or individual producing articles to the annual value of $500." All preexisting, predetermined hierarchies were consequently annulled. The fourteen standard queries first adopted in 1820 were actually recycled. However, the singular monetary criterion now made them "applicable to the details of every branch of productive industry," which meant that the new census would present a summary view of industry that did not rest on any *a priori* or permanent vision of the economic order.[28]

In the new scheme, no specific branch of industry was inherently more or less important to the nation's material life than any other. Textile magnates in Lowell and furniture upholsterers on Manhattan's South Street thus qualified for inclusion in the same economic universe. Indeed, the five-hundred-dollar definition of an industrial enterprise resulted in a far more extensive and variegated assemblage of "facts" than anything seen

---

27 J.D.B. DeBow, *The Census of 1850*, DAILY PICAYUNE, Sept. 27, 1849; J.D.B. DeBow, *The Census of 1850*, DAILY PICAYUNE, Oct. 6, 1849; J.D.B. DeBow, *The Census of 1850*, DAILY PICAYUNE, Oct. 7, 1849; J.D.B. DeBow, *The Census of 1850*, DAILY PICAYUNE, Oct. 10, 1849; J.D.B. DeBow, *The Census of 1850*, DAILY PICAYUNE, Oct. 13, 1849; J.D.B. DeBow, *Professor DeBow and the Census Board*, DAILY PICAYUNE, Nov. 10, 1849; *see also* J.D.B. DeBow, *Statistical Bureaus in the States, Etc.*, 8 DEBOWS 422 (1850).

28 Kennedy, *supra* note 1, at 115-16.

before. The businesses of confectioners, looking-glass makers, clothiers, tailors, milliners, and upholsterers, to name just a few, some identifiable as industrial giants on the basis of the aggregate value of their product, or the size of their labor force, appeared for the first time in the nation's record of economic life. What's more, the massive presence in the census of so many different types of manufacturing, let alone manufacturers, seemed to provide incontrovertible proof that the discipline of statistics was exactly what it claimed to be, namely, "a neutral ground on which all parties may cordially meet."[29] They all met over a bargain, in an economy no longer governed by a supra authority or common goal, but by enterprising individuals doing business with each other and in that way governing the material life of the republic. In contrast to preindustrial and prestatistical visions of the commonwealth, the unprecedented universality documented in such detail in 1850 was not the result of any transcendent vision of the public good which was then brought to bear on material relations. The common would be discovered, in fact, by the reverse method: first, the material facts of economic relations were to be ascertained; only then would it be possible to begin to determine the quality of their mutual relationship and thus the constituent parts of the economy. The census would give expression to the market's full and variegated character, just as Lemuel Shattuck had described his "mode of personal inquiry" as overturning an older classification system incapable of discovering facts "except the one[s] originally made." The new manufacturing schedule, in other words, was constructed on the same post-patriarchal episteme that anchored the population schedule as well, one that individualized in order to universalize, and which now proved equally effective in counting commodities as in counting persons.[30]

This new industrial taxonomy did not just generate a commercial order of unprecedented scope. It also transformed the nature of classification. That was because the fixed sum of five hundred dollars actually constituted a highly fluid boundary. Without needing to be revised every ten years, it would yield a consistently varied picture of industrial activity in accordance with the constantly shifting conditions of doing business. The money standard, in other words, was as elastic as the market it measured. This did not, of course,

---

29 J.D.B. DEBOW, THE SEVENTH CENSUS OF THE UNITED STATES: 1850. AN APPENDIX (Washington DC, Robert Armstrong 1853); *The Approaching Census*, *supra* note 5, at 77 (discussing statistics as a "neutral ground . . . .").

30 Jack Amariglio & Antonio Callari, *Marxian Value Theory and the Problem of the Subject: The Role of Commodity Fetishism*, *in* FETISHISM AS CULTURAL DISCOURSE 186, 201-02 (Emily Apter & William Pietz eds., 1993); RUSSELL, *supra* note 4, at 10-11; POOVEY, *supra* note 10, at 247.

mean that it lacked a stable point of reference. The $500 figure was strictly applied, not in the least because it could be. But in contrast to the strict notions of a permanent public good that informed previous enumerations, the 1850 model did not reproduce itself in the results. The opposite was the case. The returns now reflected the fluctuations and relativities endemic to the volatility of a market society. The census was able to document the rise of new industries and the demise of old ones without requiring any prior knowledge of them. The $500 threshold thus became the foundation of an autonomous model of knowledge, one based on a view of change as a permanent condition. Indeed, the census now resembled a mechanism running on its own perpetual motion — a popular ideal in those years — whose automatic nature precluded the government from intervening every ten years in order to design a new census. And so, a taxonomy that abolished stable hierarchies and certain results became the basis of stability and predictability. In this respect, one could see the census statistics as a structural solution to the central dilemma of bourgeois rule: how to bring order and control to industrial life without sacrificing the profits that accumulated as a result of constant movement and flux.[31]

This new order rested on money, which was credibly promoted to Archimedean status, the relativity and fluidity of exchange becoming the basis of "a harmonious whole in which all interests, commercial and manufacturing, agricultural and professional, are alike to be represented." Statisticians claimed to have discovered a classification system that reflected the multifarious affinities of industrial life. Gilbert Currie explained how the "mere facts and figures presented in the official tables gradually take on the form, substance, and habiliments, and become animated with something of the life, activity, and beauty" of material experience. Multiplicity and variety, in other words, no longer needed to be suppressed or contained under a single sovereignty now that it was possible to measure and so order it. The common monetary denominator — an "annual value of $500" — effectively turned money into the foundation of statistical neutrality, untainted as it was by narrow political interests, by traditional hierarchies, or, as improbable as it may seem, by "diversions and illusions." In fact, markets and statistics shared the fundamental axiom of analogy, the desideratum of making everything

---

31 Condorcet wrote of statistics' interest in "all the general facts which emerge from this mass of facts, and not only with those which one might have had the intention of looking for when the tables were drawn up." EMMA ROTHSCHILD, ECONOMIC SENTIMENTS: ADAM SMITH, CONDORCET, AND THE ENLIGHTENMENT 179 (2001) (quoting Condorcet); see also *id.* at 182-83, on the connection to probability. ALFRED W. CROSBY, THE MEASURE OF REALITY 82-83 (1997).

comparable. In so doing, statistics helped to naturalize a manmade reality in which apples and oranges, let alone tailored suits and iron ore, were entirely analogous components of a single "living economy." The manufacturing schedule of the census became a mirror of the accountant's ledger. Business logic, in short, was reified as statistical truth.[32]

It was true, as Henry Carey confessed to readers of *Hunt's Merchant's Magazine*, that making money the measure of value in an exchange economy was a highly problematic step, since money itself was such a fluid, indeterminate variable and really no more than a reflection of the relative movement of the goods being exchanged. "All we can say of value, therefore, is indefinite." It was also not at all certain what dollars were actually being measured by the census in 1850. Money value, and the currencies in use themselves, were notoriously unfixed in those years. No one — not economists like Carey, or accountants, or credit agencies, or Treasury officials — knew how to actually measure wealth or capital. Was the value of goods to be derived from the expenses incurred in their production, or by the income earned from their subsequent sale? Was value manifest in the static stock of goods, or only in their flow through the market? Should the actual sums be calculated as an undifferentiated total, or should they be categorized by the type of goods? There was no single answer to any of these questions. There was only a general recognition that value in the industrial market was a relative rather than absolute event, and that both the objects and subjects of value measurement were in a state of continual flux, if not transformation. But even if the value of money was to be reliably standardized, as a critic at the end of the century later wrote, it was still a questionable tool for measuring industrial activity, if not, in fact, a "statistical absurdity," since the money would keep getting counted over and over, "the finished products of one branch of industry being constantly the raw materials of another." Thus, for instance, in the production chain from wool to yarn to cloth to clothing, the value of the yarn would be counted three times and that of the cloth twice.[33]

And yet, there was a more important goal in 1850 than determining a

---

32 RUSSELL, *supra* note 4, at 10-11; GILBERT E. CURRIE, THE MATERIAL PROGRESS OF THE UNITED STATES DURING THE PAST TEN YEARS 6 (New York, Gilbert E. Currie 1862).

33 Henry Carey, *On the Nature of Commercial Value*, 40 HUNT'S MERCHANT'S MAG. 309 (1859); Hough, *supra* note 11, at 57-58; *The Next Census of the United States*, 19 HUNT'S MERCHANT'S MAG. 523 (1849); JOSEPH A. SCHUMPETER, HISTORY OF ECONOMIC ANALYSIS 589, 625-26 (Routledge 1994) (1954); *Manufactures*, *supra* note 15, at 265, 275-78, 284.

true return on capital investment. Statisticians, in fact, were not interested in measuring value. They sought, rather, to map, and consequently represent — and, some would say, invent — economic order. Money, in other words, was not a material referent. It was certainly not an absolute standard. Indeed, that is exactly what recommended it to the designers of the census. The fundamental character of money was its repudiation of any such absolutes, of any permanent substances or entities, and their replacement by that which can only be known through comparison (or, in market terms, profitable exchange). The American essayist Nathaniel Willis thus published a piece in the *Dollar* in 1841 in which he assumed a first-person moneyed identity: "I am passed and re-passed by thousands, who, with neither hold nor claim upon me, are entitled to my acquaintance." It was this very promiscuity which detached money from concrete persons and things and turned it into a wholly objective phenomenon. That objectivity rested on a value that had no inherent qualities, but was created when two or more distant agents became connected by it, which is exactly how statistics conceived of the relationship between discrete facts, which also had no meaning until they were compared, or turned into relative measurements. Money did not function as the standard of statistical measurement because it constituted an identical unit of production for all concerned, but because it constituted a common experience. As Georg Simmel observed of this dynamic, "the basic tendency of modern science is no longer to comprehend phenomena through or as specific substances, but as motions, the bearers of which are increasingly divested of any specific qualities; and it expresses the qualities of things in quantitative, i.e. relative terms."[34]

"Money is the absolutely objective entity, where everything personal comes to an end," Simmel continued. This immateriality was the secret of its success as a measure. It is what made the concept of money "the incarnation and purest expression" of an industrial economy based on commodities that did not acquire their economic existence from being manufactured, but, rather, from being exchanged for profit. Statistical money value, entirely symbolic and abstract and a "discursive sign" able to generalize the great variety of things being offered for sale, was what Marx called accounting money, "arbitrary names for fractional parts of a specific amount of the

---

34 Andrew Lyndon Knighton, Idle Threats: The Limits of Productivity in 19th-Century America 249 (2004) (unpublished Ph.D. dissertation, University of Minnesota) (quoting Nathaniel Willis); Susan Buck-Mors, *Envisioning Capital: Political Economy on Display*, 21 CRITICAL INQUIRY 440 (1995); SIMMEL, *supra* note 9, at 103; *see also id.* at 121, 146-48; G.A. Lee, *The Concept of Profit in British Accounting, 1760-1900*, 49 BUS. HIS. REV. 6 (1975).

money-substance." The only thing fixed in the iron bar, as he pronounced in the most direct terms, is the name. And, indeed, the new census taxonomy mimicked bookkeeping practices whose numbers did not have to reflect value as such, but, rather, needed to provide a consistent context for interpreting exchange. That was made clear in the way *Hunt's* explained the cardinal importance of keeping good books:

> There is no occasion, as in days of old, to weigh the shekels of silver in cumbrous scales: for not only the value of these, but dealings with all the world, may be compressed into a sheet of ruled paper — into a smaller space than any mechanical screw could force them; and yet, having a harmony more perfect than musical notes, and as true, in results, as the ends of the Deity.

And so, accounting money and statistics were both based on their formal integrity, which meant that the actual value of five hundred dollars was immaterial.[35]

V.

That, at least, was the conceit. But was the census's collection of facts in 1850 as categorically free of *a priori* impositions and qualitative judgments as the advocates of statistical truth now contended? Was the new census really so much more objective, universal, and inclusive than its "crude" predecessors? Did statistics, in other words, really contain the source of its own meaning, constituting a system invulnerable to opinion and passion, a matter for "school-teachers, used to figures?" Archibald Russell was certainly aware of the nominalist tendencies of the new science when he compared the statistician to a compiler of dictionaries and confessed that "it is quite possible to arrange a detail of facts as to bias the reader towards one or other of the leading political creeds of the day." The point was that no fact could be collected without first deciding what qualified as a

---

35 SIMMEL, *supra* note 9, at 103, 240; Marx had similar things to say. *See* KARL MARX, GRUNDRISSE: FOUNDATIONS OF THE CRITIQUE OF POLITICAL ECONOMY 141-42, 190-93, 215, 790-91, 793, 796, 808-09 (Martin Nicolaus trans., 1993); Amariglio & Callari, *supra* note 30, at 201-02; "The task of constructing a classification of intangibles is not primarily a scientific one. There is no logic of discovery or construction, just of validation." Jan-Erik Grojer, *Intangibles and Accounting Classifications*, 26 ACCT. ORG. & SOC'Y 695, 698 (2001); *see also id.* at 710; Untitled, 1 HUNT'S MERCHANT'S MAG. 294 (1839).

fact. The census could not be executed, therefore, without a "leading idea," as was explained in an address to the American Statistical Association in 1844, for otherwise it would be fruitlessly trapped in a loop between a preconception of economic life that informed the collection of facts, and a collection of facts intended to inform a conception of economic life. Russell himself supplied such a "leading idea" in his aptly entitled *Principles* when he contended with italicized emphasis that manufacturing is "the fabrication for *wholesale trade* of any species of raw material." This meant that the transformation of nature into instruments of practical use would not be counted as an industrial activity until those instruments began to circulate as goods for purchase.[36]

On one level, Russell's definition was sharply counterintuitive. He acknowledged as much himself when he noted that manufacturing "conveys readily to the mind the general impression that it is the perfecting of raw materials." However, as he replied to his own admonition, "that is not the sense in which the [statistician] uses it." For Russell and his colleagues, aspiring as they did to invent a system of knowledge capable of epitomizing the "rapid changes . . . unyielding ambition . . . irregularity of enterprise, [and] new and exciting temptations" of the age, knitting stockings at home in the winter was of such "trifling" economic significance that it could rightly be left out of the system. So too could the productive efforts of the village shoemaker. "What sort of return can he make, he knows not how many boots he has made, nor the value of those he has repaired but working for minute gains he does not keep accurate accounts of the progress of his business." There was simply no practical way, in other words, to translate all these infinite private undertakings into a public account of the nation's industry.[37]

---

36 EDWARD JARVIS, THE AUTOBIOGRAPHY OF EDWARD JARVIS 99 (Rosalba Davico ed., 1992); LAURA RIGAL, THE AMERICAN MANUFACTORY: ART, LABOR, AND THE WORLD OF THINGS IN THE EARLY REPUBLIC 8 (1998); RUSSELL, *supra* note 4, at 11-12, 55-56; AM. STAT. ASS'N, CONSTITUTION AND BY-LAWS OF THE AMERICAN STATISTICAL ASSOCIATION: WITH A LIST OF OFFICERS, FELLOWS AND MEMBERS: AND AN ADDRESS 16 (Boston, T.R. Marvin 1844); J.D.B. DeBow, *The Census of 1850*, DAILY PICAYUNE, Oct. 13, 1849. That nominalism found similar expression in an observation offered by *The Times* of London regarding contemporary efforts that, "in fixing a standard of weight or measure, create a language; but to create a language is to create a mind." Julian Hoppit, *Reforming Britain's Weights and Measures, 1660-1824*, 108 ENG. HIS. REV. 91 (1993) (quoting *The Times*); *see also* POOVEY, *supra* note 10.

37 RUSSELL, *supra* note 4, at 50-01, 121-22. An echo of Russell's thinking can be found in SAMUEL ROBERTS WELLS, HOW TO DO BUSINESS 15 (New York, Fowler & Wells 1857): "The manufacturer buys materials, changes their forms, and adds to their value, by means of the labor and skill which he applies to them, and then sells

"If all manufacturing activities *whose value fell below five hundred dollars*" (my italics, this time) were included in the census, as Gilbert Currie wrote in the *Material Progress of the United States* in 1862, the result would be "of startling magnitude." Francis Walker, analyzing the 1860 census returns in the *Atlantic Monthly*, was more specific: "Of 43,624 coopers working at their trade" (a figure Walker derived from the population schedule, where answers to the occupation query were recorded), "the production of only 13,750 is accounted for among the 'products of industry'" (a figure derived from the manufacturing schedule, which listed the number of hands employed by firms qualifying for inclusion in the schedule). "Of 112,357 blacksmiths enumerated, only 15,720 . . . contribute to the reported production of their craft; of 242,958 carpenters, only 9,006, and of 51,695 painters, only 913." A giant gap, in other words, had emerged between what was now counted as "industry" in the census's record of industry and what was otherwise still recognizable as productive labor. It was one thing to ignore family manufactures, which had clearly lost their traditional importance in an advancing industrial society. But Walker complained that the census's production taxonomy no less than erased the artisan from the official record.[38]

The new statistical language, in other words, which proved so adept at narrating the growing complexity of the industrializing economy, had no place for the producerist grammar of free soil ideologues such as Walker. Instead, it turned industry into a process in which value valorizes itself, which, as Marx explained at the time, is how capitalism invents truth. This made statistics equivalent to other market tautologies, such as the merchant who misrepresents himself as solvent in order to obtain the credit

---

the results. He is one who makes something to sell. It may be a willow basket, or it may be a rosewood piano, a rag-carpet, or a piece of broadcloth; the process is manufacturing, and he is a manufacturer, and, incidentally, a trader."

38 More than half of the non-farm population of the North lived in rural areas in 1860. JEREMY ATACK & FRED BATEMAN, TO THEIR OWN SOIL: AGRICULTURE IN THE ANTEBELLUM NORTH 202 (1987); Francis Walker, *American Industry in the Census*, 24 ATLANTIC MONTHLY 689, 691-92 (1869); SEC'Y OF THE INTERIOR, MANUFACTURES OF THE UNITED STATES IN 1860: COMPILED FROM THE ORIGINAL RETURNS OF THE EIGHTH CENSUS, at iii (Washington DC, Gov't Printing Office 1865); AM. STAT. ASS'N, MEMORIAL OF THE AMERICAN STATISTICAL ASSOCIATION, PRAYING THE ADOPTION OF MEASURES FOR THE CORRECTION OF ERRORS IN THE RETURNS OF THE SIXTH CENSUS, S. DOC. NO. 28-5, at 4-8 (2d Sess. 1844); MARTIN J. LEE, CONSUMER CULTURE REBORN: THE CULTURAL POLITICS OF CONSUMPTION 59-60 (1993); POOVEY, *supra* note 10, at 64; COHEN, *supra* note 8, at 150-51, 164-68.

which then makes him so. Counting industrial activity on the basis of the "leading idea" of producing for exchange meant, in short, that business had become synonymous with industry. That taxonomy which generated an unprecedented pluralism of economic subjects by destroying old principles and boundaries at once established new ones, the most important being, of course, profit, for every "corporation, company, or individual producing articles to the annual value of $500" did so only with the intention that such a sum should exceed their expenses As a consequence, industriousness — the physical act of transforming nature into objects of use — was no longer the defining act of what could now be called an industrial economy. Such labor — unless it was waged labor — could not be integrated into a modern universe of common values.

And so it was that industrial revolution first and foremost revolutionized the very meaning of "industrial." It did this by means of new census categories that promoted the commodity to epistemological status. The result was a concept of an economy that only worked for profit. The yeoman republic, which was founded on the alienability of (landed) property as the means for distributing citizenship, had bitten off the hand that fed it. Buying and selling were no longer just the means for disposing of the products of virtuous labor. They were now products themselves.[39]

Joseph Kennedy responded to critics of the exclusionary effects of this commodification of the census by arguing that the labor of those who worked for "minor interests" (by which he meant enterprises below the five-hundred-dollar threshold) was often to be found within the census totals of other branches of industry. But, in fact, this then made such labor equivalent to the capital investment which moved its way through the chain of production, "the finished products of one branch of industry [being] constantly the raw materials of another." It would seem, in fact, that the new census's statistical success belonged to the general shift of political economy from labor theories of value to a new understanding of manufacturing as a function of exchange. Material objects that had once cost labor to acquire were now primarily "things that have exchange value," as Nassau Senior summarized the marginalist revision of Smithian thought.[40]

---

39 *See generally* GREGORY S. ALEXANDER, COMMODITY AND PROPRIETY: COMPETING VISIONS OF PROPERTY IN AMERICAN LEGAL THOUGHT, 1776-1970 (1997); JEFFREY SKLANSKY, THE SOUL'S ECONOMY: MARKET SOCIETY AND SELFHOOD IN AMERICAN THOUGHT, 1820-1920 (2002).

40 Kennedy, *supra* note 1, at 118. On the disparity in occupation censuses, see William C. Hunt, *The Federal Census of Occupations*, 86 J. AM. STAT. ASS'N (n.s.) 467, 467-8, 480 (1909); EDWARD HIGGS, A CLEARER SENSE OF THE CENSUS: THE VICTORIAN CENSUSES AND HISTORICAL RESEARCH 94-115 (1996); Margo Conk, *Labor Statistics*

The manufacturing schedule's reliance on analytic convenience was also related to economic science's embrace of the principle of "bracketing," of excluding those facts that threatened the equilibrium of the system. In that respect, the census's new statistical paradigm rested no less on "ideal types" than had the moral economy of old. At the same time, the 1850 figures were so far richer and inclusive — so much more varied and dynamic and broadly cast — who could suspect that they rested on wholesale exclusions and hierarchies? Who could reject this resurrection of public life, one that acknowledged the importance of private ambitions, as a fiction? But while statistics assumed the appearance of an unmediated reflection of the intimate experience of millions, its coherence was based on the opposite, on its distance from personal experience, from local customs and habits, and from subjectivity itself. Indeed, statistics was infused with Cartesian assumptions about the unknowability of the subject. And so, instead of seeking to penetrate each subject in search of his or her unique traits — an increasingly illegal activity in a liberal society that defined the private self as inviolable — statistics kept to the surface, artificially transcribing innumerable forms, numbers, amounts, and sizes into a common voice. "In dealing with the individual human being, everything is uncertainty," a British contemporary wrote. "It is only of man in the aggregate that results can be calculated with accuracy."[41]

There is no better example of such artificialities, or bracketing, than the statistical invention of the average man, Quetelet's famous formulation that anchored his "social physics." The average man embodied the boundaries of knowledge in the liberal age. His averageness rested on an amalgamation of traits that made him both axiomatically normal and explicitly universal. "The individual is wholly lost sight of in the average," Nahum Capen assured skeptical legislators, who were concerned about a public backlash against the unprecedented scope and specificity of the new census queries. Or, as Robert Chambers wrote a few years earlier, "Man is seen to be an enigma only as an individual, in mass, he is a mathematical problem." An 1863 essay

---

in the American and English Census: Making Some Invidious Comparisons, 16 J. SOC. HIS. 83, 85-86 (1983); SCHUMPETER, *supra* note 33, at 626 (quoting Nassau William Senior). In neoclassical markets, as Oliver Williamson has observed, "prices serve as sufficient statistics." OLIVER E. WILLIAMSON, THE ECONOMIC INSTITUTIONS OF CAPITALISM: FIRMS, MARKETS, RELATIONAL CONTRACTING 16 (1985).

41 SCHUMPETER, *supra* note 33, at 554-69, 635-36; Michel Foucault, *Politics and the Study of Discourse*, *in* THE FOUCAULT EFFECT: STUDIES IN GOVERNMENTALITY 53, 57 (Graham Burchell et al. eds., 1991); PORTER, *supra* note 10, at 67 (quoting Robert Chambers).

on vital statistics and life insurance that appeared in the *North American Review* provided a practical example of this differential calculus between public and private, or universal and individual: "The average duration of life," the Review explained,

> is usually called the Expectation of Life . . . And so it is for a Life Insurance Company, which has insured perhaps two thousand different persons at [any given] age. Such a company may reasonably expect . . . that the two thousand or more will, on an average, live just about the number of years that is called their "expectation of life." But they cannot expect — it would be the height of folly to imagine — that any one person out of that number will live to that ‘"expected" age.[42]

As such, statistics and economics were interrelated technologies that strove in tandem to balance out irregularity and bring industrial complexity under control. Their respective generalizations and abstractions were designed to erase idiosyncrasy and escape ambiguity. The result was an unprecedented inclusiveness, which became the outstanding trait of modern democracy — and not just of the market — whose politics consciously sought to create a single, shared context for social life without adopting coercive methods and certainly without violating anyone’s individuality. This new form of commonality was advanced by a statistical uniformity which then often became the practical grammar of agreement.[43]

---

42 IAN HACKING, THE TAMING OF CHANCE (1990); Letter from Nahum Capen to John Davis, *supra* note 26, at 1, 4; DESROSIERES, *supra* note 18, at 67-68, 78-79, 239-42; PORTER, *supra* note 10, at 40-55, 57, quotation from 57. John Jay: "What can be more uncertain than the details which the census obtains concerning a single life!". Hough, *supra* note 11, at 58; *Life Insurance*, 97 N. AM. REV. 301, 309 (1863).

Horwitz argues that the impersonality of statistical averages was part of the rise of a new, commercially oriented "culture of risk" and of the movement toward "market equilibrium." MORTON HORWITZ, THE TRANSFORMATION OF AMERICAN LAW 1780-1860, at 233-37 (1977). This recognition, naturalization, institutionalization, and regularization of risk made it universal and ubiquitous while at once seeking to bring it under control and make it governable, to the point where it has capitalized, that is, turned into a form of capital. Francois Ewald, *Insurance and Risk*, *in* THE FOUCAULT EFFECT: STUDIES IN GOVERNMENTALITY, *supra* note 41, at 197. But such "averages" were not immediately embraced. See Porter, *supra* note 20; Sharon Murphy, Security in an Uncertain World ch. 6 (2004) (unpublished Ph.D. dissertation, University of Virginia).

43 M. Norton Wise, *Precision: Agent of Unity and Product of Agreement, Part I — Traveling*, *in* THE VALUES OF PRECISION, *supra* note 20, at 92, 94; WOLIN, *supra* note 7, at 92-99; Miriam R. Levin, *Contexts of Control*, *in* CULTURES OF CONTROL 13, 15-17, 21-24 (Miriam R. Levin ed., 2000).

The census thus provided stable categories for making decisions and taking action. Francis Walker, for instance, observed how the tables of the "Products of Industry" have been

> quoted and indorsed, appealed to and argued from, by editors, economists, and statesmen, at home and abroad; they have been used with confidence in ascertaining the law of the national growth; economical legislation has been shaped by them; they have been made the basis of internal taxation, and have governed the distribution of banking capital among the States.

As Theodore Porter has argued, social quantifications — like the natural sciences — "work best if the world they aim to describe can be remade in their image." Such remaking found apposite expression in Jesse Chickering's *Statistical View of the Population* (1844), which reviewed and organized data he had collected from Massachusetts sources dating back to the middle of the previous century. Chickering then used these numbers to plot a demographics ("the radius of the circle which embraced one half of the population of the state, was contracted about 6 miles, or from 35 to about 29 miles, during the fifty years from 1790 to 1840") that effectively redrew the political boundaries of the state. The new demarcations were based on population movement, on agricultural practices and on industrial activity, all consequently judged to be either progressive or static. And so, too, the "centre of population," like the "centre of wealth," was a constantly shifting geography that constituted a dramatic contrast to traditional territorial boundaries. The state, in other words, was now statistical rather than physical, and abstract rather than concrete, like so much circulating money, to which, in fact, it was inseparably tied. For Chickering's numerology revealed a dramatic industrial shift after 1820. When he compared the census returns of 1820 to those of 1840, he discovered that Massachusetts's total population had grown ten times more than the numbers of those working the land. The only reason the state had not lost population during this period was because manufacturing and commerce offered alternative employment. Even where the agricultural population had increased, it was in the vicinity of industrial centers. The future of Massachusetts, then, and, in fact, of all New England, was closely tied to industrial progress, without which they were doomed to demographic, and political, insignificance.[44]

Statistics was an ambitious knowledge project precisely because it was

---

44 DESROSIERES, *supra* note 18, at 247-54; Walker, *supra* note 38, at 689; THEODORE M. PORTER, TRUST IN NUMBERS: THE PURSUIT OF OBJECTIVITY IN SCIENCE AND PUBLIC LIFE 43 (1996); CHICKERING, *supra* note 22, at 41-43, 79-87, 97-110, quotation from

so practical, seeking to contain the complexity and variation of modern industrial life without altering it, that is, without interfering in the dynamism and fluidity so essential to profits and progress. "In the totality of this disorderly movement," as Marx wrote of the constant flux of prices, "is to be found its order." And so, improbably enough, "anarchy" and "balance" became synonyms. Statistics was the scientific expression of such dialectics: it was at once mobile and stable, abstract and concrete. Its ability to combine, superimpose, aggregate, and reassemble a limitless number of "isolated facts" suited those restless habits of "changing place, of turning things upside down, of cutting, of destroying" that had impressed Tocqueville as being the essence of democratic life in America.[45] The invention of industrial statistics was not, then, simply another technology for rationalizing the economy in order to make appropriate policy. These statistics comprised a new form of knowledge that actually made liberal democracy and its capitalist economy governable.

79; for another example, see S. AUGUSTUS MITCHELL, MITCHELL'S SCHOOL ATLAS (Boston, E.H. Butler & Co. 1866).

45 WOLIN, *supra* note 7, at 109 (quoting Alexis de Tocqueville); Keith Robson, *Accounting Numbers as "Inscription": Action at a Distance and the Development of Accounting*, 17 ACCT. ORGS. & SOC'Y 685, 697-98 (1992); Bruno Latour, *Visualization and Cognition: Thinking with Eyes and Hands*, *in* 6 KNOWLEDGE AND SOCIETY: STUDIES IN THE SOCIOLOGY OF CULTURE PAST AND PRESENT 1, 3-4 (H. Kukli & E. Long eds., 1986); White, *supra* note 9, at 217.