The Scientific Rationality of Early Statistics, 1833–1877

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Declaration

This dissertation is the result of my own work and includes nothing which is the outcome of work done in collaboration except as declared in the Preface and specified in the text.

It is not substantially the same as any that I have submitted, or, is being concurrently submitted for a degree or diploma or other qualification at the University of Cambridge or any other University or similar institution except as declared in the Preface and specified in the text. I further state that no substantial part of my dissertation has already been submitted, or, is being concurrently submitted for any such degree, diploma or other qualification at the University of Cambridge or any other University or similar institution except as declared in the Preface and specified in the text

It does not exceed the prescribed word limit of 80,000 words for the Degree Committee of the Faculty of History.

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Summary

This thesis examines the activities of the Statistical Society of London (SSL) and its contribution to early statistics—conceived as the science of humans in society—in Britain. The SSL as a collective entity played a crucial role in the formation of early statistics, as statisticians envisaged early statistics as a collaborative scientific project and prompted large-scale observation, which required cooperation among numerous statistical observers. The first three chapters discuss how the SSL shaped the concepts, practices, and institutions of statistical data production. The SSL demonstrated how the use of a hierarchical division of labour and blank form minimised observers' leeway to exercise individual observational skills and ensured uniformity in the production of statistical facts. This arrangement effectively depreciated first-hand observation in statistics and allowed statisticians to rely on the statistical facts collected by other people. It prompted the SSL to launch the *Journal of the Statistical Society of London* to serve as a virtual storage of observed facts where one could share their data for further aggregation and retrieve that of others for their analysis. The statisticians also engaged in contemporaneous discussion on the best mode of a statistical office with a view towards producing complete and internationally comparable statistical facts. The SSL's endorsement of the Belgian Central Statistical Commission model and the International Statistical Congress was intended to support the introduction of uniformity into statistical data at both the national and international levels. The last two chapters of this thesis discuss how the SSL's activities contributed to the historical formation of human sciences and the emergence of social scientists. Statisticians demanded the recognition of a scientific field which, independent from natural science, studied people as social beings and whose discourses moulded the treatment of the people they studied. The SSL's activities helped statisticians not only establish their scientific expertise but also develop their unique scientific ethos. Statisticians learnt not to trust their personal observations since individuals could see only a partial, and potentially distorted, picture of society. Instead, statisticians disciplined themselves to patiently wait for the accumulation of statistical facts and analyse data in their entirety because this was the only way, they believed, to truly understand the complex relationships people had with each other. The SSL's activities assisted statisticians' conception of statistical fact and produced a new kind of intellectual inquirer who patiently collected statistical facts as the basis of knowing and intervening in people's lives.

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Table of Contents

A List of Abbreviations

BAAS	British Association for the Advancement of Science
CC	Census Committee
CSC	Central Statistical Commission
GRO	General Register Office for England and Wales
HSC	Hospital Statistics Committee
ISC	International Statistical Congress
JSSL	*Journal of the Statistical Society of London*
JRSS	*Journal of the Royal Statistical Society*
MP	Member of Parliament
MSS	Manchester Statistical Society
ODNB	*Oxford Dictionary of National Biography*
PSSL	*Proceedings of the Statistical Society of London*
RSS	Royal Statistical Society
SCEPC	Select Committee on the Education of the Poorer Classes
SCPD	Select Committee on Public Documents
SDBT	Statistical Department at the Board of Trade
Section F	Section F at British Association for the Advancement of Science
SPCK	Society for Promoting Christian Knowledge
SSA	Social Science Association (formally known as National Association for the Promotion of Social Science)
SSL	Statistical Society of London
TSSL	*Transactions of the Statistical Society of London*

Introduction

> So Asia will be gradually drawn into the domain of science in the north by Russia, while in the south and east she is enlightened and led out of Oriental immobility by England. If China has really an authentic census, as Sir John Bowring[1] believes, it is of little scientific value. But we must not despair; the statistical flag may yet float over that multitudinous empire. Japan, once so exclusive, has grown alive to the value of statistics; envoys have visited the statistical departments here; nine members represented at the Congress [International Statistical Congress] those eastern isles so interesting to us, as almost the twins of these isles in the west we inhabit. One of the delegates of Japan, after the dinner, spoke in very energetic terms, and gave as a toast, 'The Fraternity of Nations!' Yes; fraternity in science, as well as in trade: this our Society heartily reciprocates with our Japanese colleagues. (William Farr,[2] at the Statistical Society of London, 19 November 1872)[3]

1. The Global Circulation of Statistical Facts

In his 1872 inaugural address of the Statistical Society of London (SSL), then-President William Farr celebrated the expansion of 'the systematic observation of statistical facts'.[4] Witnessing the success of the eighth International Statistical Congress (ISC) held in Saint Petersburg that same year, he envisioned the triumph of statistics across Europe, its colonies, and even beyond, reaching Africa, Latin America, and East Asia.[5] Farr dreamed of statistics prevailing over the vast empire of China. He applauded Japan for finally

[1] John Bowring was Jeremy Bentham's disciple and was appointed editor of the *Westminster Review* in 1824. After Bentham's death, he became Bentham's literary executor and edited a collection of Bentham's manuscripts, *The Works of Jeremy Bentham*. He became the Consul of Canton in 1848. For a complicated relationship between Bentham and Bowring, see G. F. Bartle, 'Jeremy Bentham and John Bowring: A Study of the Relationship between Bentham and the Editor of His Collected Works,' *Historical Research* 36:93 (1963): 27–35. For Bowring's *Oxford Dictionary of National Biography* (*ODNB)* entry, see Stone, Gerald. 2009 'Bowring, Sir John (1792–1872), politician, diplomatist, and writer.' *Oxford Dictionary of National Biography.* [accessed on 16 Oct. 2018]

[2] William Farr was the Statistical Superintendent at the GRO and arguably the most eminent Victorian statistician. He was a leading member of the SSL and was its president in 1871–1873. For his contribution to the creation of the international statistical classification of diseases, see Chapter Three of this thesis. For his intellectual biography, see John M. Eyler, *Victorian Social Medicine: The Ideas and Methods of William Farr* (Baltimore ; London: Johns Hopkins University Press, 1979). For Farr's *ODNB* entry, Eyler, John M. 2004 'Farr, William (1807–1883), statistician and epidemiologist." *Oxford Dictionary of National Biography.* [accessed on 7 Oct. 2018]

[3] William Farr, 'Inaugural Address Delivered at the Society's Rooms, 12, St. James's Square, London, on Tuesday, 19th November, 1872', *Journal of the Statistical Society of London* 35:4 (1872), 424. [] is inserted for clarification. The Japanese envoys to whom Farr was referring, probably constituted the Iwakura Embassy that visited the United Kingdom between August and December in 1872, representing a new government of Japan after the Meiji Restoration in 1868.

[4] Ibid, 418.

[5] For the Statistical Congress in Petersburg, see Nico Randeraad, *States and Statistics in the Nineteenth Century: Europe by Numbers*, trans. Debra Molnar (Manchester: Manchester University Press, 2010), Ch. 8. For the SSL's official report of the Congress, see Samuel Brown, 'Report on the Eighth International Statistical Congress, Held at St. Petersburg, 22nd/10th August to 29th/17th, 1872.', *Journal of the Statistical Society of London* 35:4 (1872): 431–57.

embracing the value of statistics and sending its first delegates to the ISC in Russia, where one of the Japanese delegates, Farr remembered, toasted 'the Fraternity of Nations'.[6] 'Yes,' Farr replied, 'fraternity in science, as well as in trade: this our Society [SSL] heartily reciprocates with our Japanese colleagues.'[7]

Farr's belief in the eventual realisation of the global statistical community seems unproblematic when we live in a world where international comparisons of the population, unemployment rate, and under-five mortality rate are commonly made. However, for Farr, it was the future to come rather than the current reality. Farr was one of the most prominent Victorian statisticians, or 'statists', as they preferred to call themselves. He was the statistical superintendent at the General Register Office for England and Wales (GRO), where he compiled population and vital statistics for the British government. He understood the merits of international cooperation in the collection of statistical data. In fact, it was Farr who proposed the international classification of the causes of death for the international collection of medical statistics at the ISC.[8] His classification preceded the first International Statistical Classification of Disease designed by Jacques Bertillon[9] in 1901, which is the direct predecessor of today's International Classification of Diseases, commonly known as the ICD-11. Farr was not ignorant of the difficulties in collaborative statistical data-gathering among different organisations. As Farr also admitted in the same address quoted above, different modes of census in England, Scotland, and Ireland prompted statisticians to question the comparability of census data even within the United Kingdom, let alone other governments around the world.[10] He was not free from the racial discourse of his time either. He was glad, for the sake of science, that a large part of the world was occupied by the English, who were, 'like every governing race', statistical.[11] Asia in the south and east was, Farr insisted, 'enlightened and led out of Oriental immobility by England'.[12] Notwithstanding his clear understanding of the difficulties that awaited the statistical community and his apparently low opinion of 'Orientals', Farr welcomed non-European colleagues from the 'Far East' and affirmed the ISC's ideal that

[6] Farr, '1872 SSL Inaugural Address,' 424.
[7] Ibid, 424. [] is inserted for clarification.
[8] For more detailed discussion on this topic, see Chapter Three of this thesis.
[9] Jacques Bertillon was a French statistician. His father was Louis Bertillon, the director of the statistical office in Paris. His younger brother, Alphonse Bertillon, created the Bertillon system of anthropometry. For the Bertillon's relationship with the formation of demography in France, see Libby Schweber, *Disciplining Statistics: Demography and Vital Statistics in France and England, 1830-1885*, Politics, History, and Culture (Durham, NC; London: Duke University Press, 2006), Ch. 3.
[10] Farr, '1872 SSL Inaugural Address', 426.
[11] Ibid, 425.
[12] Ibid, 424.

'all nations should be represented by delegates of their Governments as well as by their Statists'.[13]

Statisticians' conviction that the statistical community was destined to expand appears even more remarkable considering the rather short history that systematic statistical observation had at that point. It was only in the 1820s that Europe started to see what Ian Hacking calls the avalanche of printed numbers, the unprecedented production of statistical data.[14] It not only increased the sheer amount of statistical information but also transformed the nature of statistical data. Statistical documents publicly shared information that was previously considered to be state secret.[15]

In Britain, the first decennial census in England and Wales was conducted in 1801.[16] In the 1830s, Britain experienced its own statistical movement and created new statistical organisations.[17] In 1833, the Manchester Statistical Society (MSS) was founded as the first statistical society in Britain.[18] In the same year, the British Association for the Advancement of Science (BAAS) created Section F as a new branch specialising in statistics.[19] The Statistical Department at the Board of Trade (SDBT) was set up in 1832 as the first governmental department specialising in statistics, and it was made permanent in 1833 as a supposedly central organisation of governmental statistics.[20] The GRO was

[13] Ibid, 418. For British perception of the Japanese before and after the Russo-Japan war, see Chika Tonooka, 'Reverse Emulation and the Cult of Japanese Efficiency in Edwardian Britain', *The Historical Journal* 60:1 (2017): 95–119.

[14] Ian Hacking, 'Bio-Power and the Avalanche of Printed Numbers', *Humanities in Society* 5 (1982): 279–95; Ian Hacking, 'How Should We Do the History of Statistics?', in *The Foucault Effect: Studies in Governmentality, with Two Lectures by and an Interview with Michel Foucault*, ed. Graham Burchell, Colin Gordon, and Peter Miller (London: Harvester Wheatsheaf, 1991), 181–95. Westergaard discussed the same event much earlier than Hacking. See Harald Westergaard, *Contributions to the History of Statistics* (London: P. S. King & Son, 1932), Ch. 13.

[15] Hacking, 'The Avalanche of Printed Numbers', 286-287. Ian Hacking, *The Taming of Chance*, (Cambridge: Cambridge University Press, 1990), Ch. 3.

[16] For the history of British census, see Edward Higgs, *Making Sense of the Census Revisited: Census Records for England and Wales 1801-1901, a Handbook for Historical Researchers* (London: Institute of Historical Research, 2005); Stephen John Thompson, 'Census-Taking, Political Economy and State Formation in Britain, c. 1790-1840' (PhD thesis, University of Cambridge, 2010).

[17] M. J. Cullen, *The Statistical Movement in Early Victorian Britain: The Foundations of Empirical Social Research* (Hassocks: Harvester Press, 1975).

[18] Ibid, Ch. 8. For the comprehensive history of the MSS, see Thomas Southcliffe Ashton, *Economic and Social Investigations in Manchester, 1833-1933 : A Centenary History of the Manchester Statistical Society*, re (Hassocks: Harvester Press, 1977).

[19] Lawrence Goldman, 'The Origins of British "Social Science": Political Economy, Natural Science and Statistics, 1830-1835', *The Historical Journal* 26:3 (1983): 587–616. Section F expanded to include 'economic science' in 1856. For the fluctuating relationship between statistics and economic science, see Libby Schweber, *Disciplining Statistics: Demography and Vital Statistics in France and England, 1830-1885* (Durham, NC. ; London, 2006), 118, 126-128.

[20] Lucy Brown, *The Board of Trade and the Free-Trade Movement, 1830-42* (Oxford: Clarendon Press,

created for the civil registration of births, deaths, and marriages and began compiling vital statistics in 1837; it took charge of the England and Wales census and functioned as a powerful statistical data producer in Britain.[21] In the middle of this pan-European craze for statistics, the SSL was formed for the collection of social facts in 1834.[22] Less than half a century later, the SSL president was convinced that the empire of statistics would eventually conquer the whole world.

The SSL was a pivotal organisation in the British statistical movement. It was established to promote a new science of human beings in society, which I shall call early statistics. Statisticians who gathered at the SSL expanded the scope of observation to cover every aspect of human lives. The SSL's activities produced a new type of intellectual inquirer who was devoted to realising an unlikely future where statisticians from different nations would help each other conduct coordinate statistical observation. They would read, compile, and circulate apparently dry statistical documents, and those bland numbers in statistical tables would freely travel across the globe and transcend the boundaries of nations, races, and languages. British statisticians spent a considerable amount of time and energy on this venture. Their efforts apparently paid off, as we have come to live in a world where we are urged to turn to an ever-increasing amount of statistical data about our social lives for assessing and intervening in social issues. In fact, their scientific project appears to have been so successful that their achievement has become a mundane and tedious reality of our daily lives. Historical inquiry into the SSL's scientific activities and their conceptual legacy should be a promising project to illuminate how our world has been shaped through history.

2. The Designing of the Statistical Community

The Prospectus of the SSL declared that it was 'established for the purposes of procuring, arranging, and publishing "Facts calculated to illustrate the Condition and Prospects of Society"'.[23] Although the SSL defined the collection of social facts as its scientific

1958), Ch. 5. Cullen, *The Statistical Movement*, Ch. 1.

[21] Edward Higgs, *Life, Death and Statistics: Civil Registration, Censuses and the Work of the General Register Office, 1836-1952*, Local Population Studies Supplement (Hatfield: Local Population Studies, 2004), vii. Also see a special volume of *Social History of Medicine* 4:3 in 1991, which is edited by Simon Szreter and dedicated to the history of GRO.

[22] Cullen, *The Statistical Movement*, Ch. 6 and Ch. 7; Victor L. Hilts, 'Aliis Exterendum, or, the Origins of the Statistical Society of London', *Isis* 69:1 (1978): 21–43; Goldman, 'The Origins of British "Social Science"'.

[23] 'Prospectus of the Objects and Plan of the Statistical Society of London', in *Report of the Third Meeting of the British Association for the Advancement of Science; Held at Cambridge 1833* (London: John Murray,

mission, it did not actively conduct original surveys, except in its early days.[24] Instead, the SSL was apparently involved in creating and maintaining the statistical community and developed the theory and practices of coordinated statistical observations. In 1837, the SSL Council likened the process of statistical observation to that of coinage.[25] Small particles of gold collected by various collectors were worthless in themselves, but they could be unified into one precious gold coin; similarly, the SSL Council claimed, statisticians envisaged that small fragments of information could be separately collected and aggregated to produce statistical fact as 'the currency of science'.[26] With this view of statistical fact, the SSL promoted cooperation in statistical data-gathering, both domestically and internationally.

The collective efforts to accumulate facts had precedents in history, as collective observational practices had become common since at least the late seventeenth-century in Europe.[27] Facts were gathered through academic journals, personal correspondence, and paid reporters. The idea of the Republic of Letters fostered private correspondence among learned men, and learned journals, such as the Royal Society's *Philosophical Transactions*, solicited observations from their readers.[28] Travellers were also employed to collect information from colonial lands.[29]

As was often the case in precedents of coordinated observations, the SSL faced an issue of disparity in observers' capabilities.[30] It posed questions: Who should be regarded as a competent statistical observer? How could one trust statistical observers when they had

1834), 492. The SSL's attention to facts is well documented by historians. See Hilts, 'Aliis Exterendum'; Goldman, 'The Origins of British "Social Science"'. Mary Poovey, *A History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society* (Chicago: University of Chicago Press, 1998), Ch. 7.

[24] Cullen, *The Statistical Movement*, 100–101. Alain Desrosières, *The Politics of Large Numbers: A History of Statistical Reasoning*, trans. Camille Naish (Cambridge, MA; London: Harvard University Press, 1998), 173-175.

[25] 'Third Council Report, March 15, 1837 in A1/1 Reports of Council & Lists of Fellows, 1834-1853' Royal Statistical Society Archive, 7.

[26] Ibid, 7.

[27] For an overview on the development of the community of observers, see Lorraine Daston, 'The Empire of Observation, 1600-1800', in *Histories of Scientific Observation*, ed. Lorraine Daston and Elizabeth Lunbeck (Chicago, IL: University of Chicago Press, 2011). See also, Lorraine Daston, 'Baconian Facts, Academic Civility and the Prehistory of Objectivity', in *Rethinking Objectivity*, ed. Allan Megill (Detroit: Wayne State University Press, 1992), 37–63. and Lorraine Daston, 'On Scientific Observation', *Isis* 99:1 (2008): 97–110.

[28] For the idea of the Republic of Letters, Lorraine Daston, 'The Ideal and Reality of the Republic of Letters in the Enlightenment', *Science in Context*, The Republic of Letters in the Enlightenment, 4:2 (1991): 367–86.

[29] Daston, 'The Empire of Observation', 87–88.

[30] The following discussion on the community of observers is summarised from Daston's overview on the history of scientific observations. See Daston, 'The Empire of Observation'.

varying degrees of perceptual ability, depending on individual acuity and observational skills?[31] Without trust in the statistical observers, scattered observations could not be compared to each other.

What distinguished the burgeoning statistical community in the first half of the nineteenth century from preceding attempts was the unique conception of fact and the government's direct involvement in the collection of facts. While the SSL initially sanctioned its original surveys, the SSL's members soon became deeply dependent on governmental statistics that were collected by nameless bureaucrats.[32] Governmental departments were key players in the production of statistical facts throughout the nineteenth century since they had both administrative authority and the power to mobilise a large number of people for the collection of statistical information. The reliance on official statistics, however, could have raised questions regarding the quality of observers employed by governmental offices since they were not specifically trained for scientific observation. As a leading scientific society dedicated to statistics, the SSL's fellows apparently dealt with this potential issue and developed observational theory and practices that legitimised the use of government agents in statistical observation. In fact, statisticians' trust in official statistics could extend even beyond European territories to the point that statisticians welcomed statistical data produced by the supposedly inadequately intellectual 'Orientals'.[33] In this supposedly global statistical community, the fraternity of nations was, as Farr's address suggests, smoothly translated into the fraternity in science.

In 1838, the SSL created the *Journal of the Statistical Society of London* (*JSSL*) to further expand the statistical community in Britain. The SSL celebrated the creation of the *JSSL*, which was 'devoted to the collection and comparison of Facts which illustrate the condition of mankind, and tend to develop the principles by which the progress of society is determined'.[34] The *JSSL* was an important part of the SSL's collective scientific project and apparently functioned as a virtual storehouse of statistical facts. Since statistical fact was conceived as the aggregation of numerous observations, the *JSSL* provided a place where one could share with others their small-scale observations for further aggregation. As statisticians became dependent on governments for the execution of large-scale

[31] For the historical case of apparently contradicted observation and the Royal Society's skilful resolution, see N. S. Hetherington, 'The Hevelius-Auzout Controversy', *Notes and Records of the Royal Society of London* 27:1 (1972): 103–6; Steven Shapin, 'O Henry', *Isis* 78:3 (1987), 421–422.
[32] Desrosières, *The Politics of Large Numbers*, 173-175.
[33] Farr, '1872 SSL Inaugural Address', 424.
[34] Statistical Society of London, 'Introduction', *Journal of the Statistical Society of London* 1:1 (1 May 1838), 1.

surveys, statisticians focused on concentration and condensation of already available but scattered facts.

The new concept of statistical fact was not merely an idea that was articulated in texts; it shaped the very act of making and using texts.[35] The style of writing is a key issue in the history of fact, as a form of factual writing had to cater to a specific conception of fact.[36] In the late seventeenth century, the newly established Royal Society placed facts, as opposed to demonstrable knowledge, at the centre of knowledge production, and accordingly invented new styles of writing. The Royal Society's leading figure, Robert Boyle, was concerned with establishing the authenticity of facts that his experiments produced.[37] He conducted public demonstrations so that the audience could personally witness the process and outcome of experiments. Boyle also published a detailed account for those who could not attend those public experiments. His text included detailed proceedings of an experiment that recorded even failures and copperplate engravings that showed unidealised pictures of scientific instruments. They were designed to enable the readers to virtually 'witness' the experiment and verify the authenticity of produced experimental facts without actually attending the public experiment. At the same time, the Royal Society's *Philosophical Transactions* created a new form of writing for scientific correspondence.[38] This style was catered for a very brief factual report and was distinguished from extensive treatises.

Victorian statisticians' writing style was apparently in conformity with their conception of fact. In contrast with 'authored observation' submitted to the learned journals in early modern Europe, statistical reports often did not bear the names of observers.[39] Endless

[35] Kenji Sato's essays sketch how the history of social surveys shaped writing and reading practices in modern Japan and have been inspirational to my thesis. See the collection of his essays: Kenji Sato, *Literacy in the History of Social Surveys* (Tokyo: Shinyo-Sya, 2011). [in Japanese. The original Japanese title is the following: 佐藤健二『社会調査史のリテラシー』新曜社]

[36] Latour highlights the diversity of the texts, or what he calls 'inscriptions', in scientific activities and points out that scientific laboratories produce various types of texts, including maps, laboratory notebooks, and readings of measuring devices, as well as journal papers. Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society* (Milton Keynes: Open University Press, 1987), Ch. 2. Bruno Latour, 'Drawing Things Together', in *Representation in Scientific Practice*, ed. Michael Lynch and Steve Woolgar (Cambridge, MA; London: MIT Press, 1990), 19–68. For the importance of non-linguistic text such as images, see Karin Knorr-Cetina and Klaus Amann, 'Image Dissection in Natural Scientific Inquiry', *Science, Technology, & Human Values* 15:3 (1990): 259–83.

[37] The following discussion on Boyle's literary technology is a brief summary of the following work. Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton, N.J: Princeton University Press, 1985), Ch. 2.

[38] Lorraine Daston, 'Why Are Facts Short?', in *A History of Facts* (Berlin: Max-Planck-Institut für Wissenschaftsgeschichte, 2001), 5–6.

[39] Daston, 'The Empire of Observation', 87. For the tension between authorship and data collection, see

arrays of faceless numbers in statistical documents were so different from ordinary writing that they perplexed even printers. In 1833, John Marshall,[40] the statistical writer who was privately compiling statistical information for public use, complained to the Select Committee on Public Documents (SCPD) about the difficulty in finding a typesetter for his statistical work: 'although the men are paid double wages for all tabular matter, ninety-nine out of a hundred have an aversion to work upon it'.[41]

Statisticians were aware of different styles of describing human lives. In the mid-nineteenth century, the Victorian social explorer Henry Mayhew wandered around the city of London to witness the life of the poor with his own eyes and provided vivid descriptions of their living conditions.[42] Even within the history of statistics, statisticians could find a different style of writing. Statistics in pre-nineteenth-century Germany, where statistics supposedly originated, was similar to geography and produced detailed descriptions of the state.[43] Frédéric Le Play, a French counterpart of Victorian statisticians, apparently came to prefer British parliamentary inquiries that directly interacted with and observed the people over statistical facts, as the latter was produced by second-hand observation.[44] Yet, Victorian statisticians deliberately chose the statistical tables as the main method to describe social life.

The *JSSL* helped shape statisticians' writing style. In 1838, the same year as the creation

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Bruno J. Strasser, 'The Experimenter's Museum: GenBank, Natural History, and the Moral Economies of Biomedicine', *Isis* 102:1 (2011): 60–96.

[40] John Marshall was a statistical writer. His statistical digest, titled *A Digest of All the Accounts Relating to the Population, Productions, Revenues, Financial Operations, Manufactures, Shipping, Colonies, Commerce of the United Kingdom*, was published in 1833. For Marshall's *ODNB* entry, see Goodwin, Gordon. 2004 'Marshall, John (1782/3–1841), writer on statistics.' *Oxford Dictionary of National Biography.* [accessed on 16 Oct. 2018] For his role in the history of statistics, see Chapter Three of this thesis.

[41] *First Report from the Select Committee on Public Documents: With the Minutes of Evidence, and an Appendix*. UK House of Commons Papers, 1833, (44), 13, q85. Also, see Oz Frankel, *States of Inquiry: Social Investigations and Print Culture in Nineteenth-Century Britain and the United States*, New Studies in American Intellectual and Cultural History (Baltimore: Johns Hopkins University Press, 2006), 48.

[42] For Mayhew's achievements, see Eileen Yeo, 'Mayhew as a Social Investigator', in *The Unknown Mayhew; Selections from the Morning Chronicle, 1849-1850*, ed. E. P. Thompson and Eileen Yeo (London: Merlin Press, 1971), 51–95. Also, see Raymond A. Kent, *A History of British Empirical Sociology* (Aldershot: Gower, 1981), Ch. 2.

[43] For French style of statistical writing at the beginning of nineteenth century, see Marie-Noëlle Bourguet, 'Décrire, Compter, Calculer: The Debate over Statistics during the Napoleonic Period', in *The Probabilistic Revolution Vol1: Ideas in History*, ed. Lorenz Krüger, Lorraine Daston, and Michael Heidelberger (Cambridge, MA: MIT Press, 1987), 305–16. For an over view of German style statistics and its criticism of 'table makers', see Desrosières, *The Politics of Large Numbers*. Ch. 1.

[44] Theodore M. Porter, 'Reforming Vision: The Engineer Le Play Learns to Observe Society Sagely', in *Histories of Scientific Observation*, ed. Lorraine Daston and Elizabeth Lunbeck (Chicago, IL: University of Chicago Press, 2011), 287.

of the *JSSL*, the SSL Council praised statisticians' unique writing style: 'It is indeed truly said that, the spirit of the present age has an evident tendency to confront the figures of speech with the figures of arithmetic.'[45] The *JSSL* further allowed statisticians to publish apparently boring statistical papers that provided no hypothesis, no conclusion, and even no 'original' data, as those papers were made of statistical facts gleaned from existing literature. The *JSSL* also moulded the readership of statistical literature. The *JSSL* was apparently designed as a place where one could find data to use for one's own research. Each volume of the *JSSL* had an index to facilitate the search for relevant data sets. In 1854, the SSL published the first general index that covered the first fifteen volumes and further published additional general indexes in 1863, 1874, and 1889.[46]

Statisticians knew that their writing was not enjoyable for most readers. However, it did not shake their faith in their method of representation. Statisticians patiently wrote, read, and disseminated colourless statistical tables, apparently because their literary style was optimised to cater to their needs to accumulate, condense, and circulate factual reports transnationally and even translingually.

The unprecedented circulation of statistical data was accompanied by a proliferation of statistical offices across European countries.[47] Hacking makes an interesting observation that the distinct notion of a specialised statistical office only emerged in the first decade of the nineteenth century.[48] While the state, church, or private bodies may have had persons who collected numerical information as a part of their activities, there was no

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[45] Cited in Mary Poovey, *A History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society* (Chicago: University of Chicago Press, 1998), 312. For the original, see 'Fourth Annual Report of the Council of the Statistical Society of London', *Journal of the Statistical Society of London* 1:1 (1 May 1838), 8.

[46] *Journal of the Statistical Society of London General Index to the First Fifteen Volumes* (London: John William Parker & Son, 1854). *Journal of the Statistical Society of London General Index to Volumes 16-25 (1853-1862)*, 1863; *Journal of the Statistical Society of London General Index to Volumes 26-35 (1863-1872)*, 1874; *Journal of the Statistical Society of London General Index to Volumes 36-50 (1873-1887)*, 1889.

[47] Westergaard, *Contributions to the History of Statistics*, Ch. 13. Jean-Guy Prévost and Jean-Pierre Beaud, *Statistics, Public Debate and the State, 1800-1945 : A Social, Political and Intellectual History of Numbers* (London: Pickering & Chatto, 2012), 68–71. For the institutional history of statistical offices in European countries, the following, although very old, is informative. John Koren, ed., *The History of Statistics, Their Development and Progress in Many Countries; in Memoirs to Commemorate the Seventy Fifth Anniversary of the American Statistical Association* (New York: Macmillan Company of New York, 1918).

[48] Ian Hacking, 'Was There a Probabilistic Revolution, 1800-1930?', in *The Probabilistic Revolution Vol. I: Ideas in History*, ed. Lorenz Krüger, Lorraine Daston, and Michael Heidelberger (Cambridge, MA: MIT Press, 1987), 50–51. Hacking, *The Taming of Chance*, 28–29. For Hacking's analysis of statistical office, see Ch 3 and Ch4 of the same book and Ian Hacking, 'Prussian Numbers 1860-1882', in *The Probabilistic Revolution Vol. I: Ideas in History*, ed. Lorenz Krüger, Lorraine Daston, and Michael Heidelberger (Cambridge, MA: MIT Press, 1987), 377-394.

institution that was specifically created for the collection of statistical facts. Hacking asserts that the Prussian Statistical Office, established in 1805 and reorganised in 1810, was the first of its kind.[49] The historical accuracy of Hacking's claim may be questioned, as Sweden supposedly created the Superior Commission of Statistics in 1756 and France established the General Statistics Office, or *Bureau de Statistique Générale*, in 1800.[50] Unlike their Prussian counterpart, however, both the Swedish and French statistical organisations were secretive offices whose functions were to assist rulers not to inform the public.[51] Moreover, the Prussian Statistical Office was novel in that it prompted discussions on what we can call the theory of a statistical office. The Prussian statistical office posed to Prussian bureaucrats and statemen the questions of what a statistical office was, how, and for what purpose it should be organised, and who should direct such an institution.[52]

The design of statistical offices was not a mere administrative issue, as it was pertinent to the early statisticians' scientific mission of the accumulation and circulation of statistical facts. While statistical enthusiasts in Britain welcomed an increase in publicly available statistical information published by the British government, they repeatedly criticised the chaotic state of official statistics in Britain. Different governmental departments published statistical documents without interrelating with each other, which resulted in the circulation of disintegrated and incomplete statistical data. John Marshall and other witnesses at the SCPD testified to the disarray of existing statistics. John Bowring argued that the establishment of a central statistical organisation could resolve the issue.[53] He claimed: 'My own opinion is, that satisfactory statistics will scarcely be obtained until their collection is made the special business of some Department, and that Impression is made more strong by my having seen, of late, that in most of the representative countries of Europe the subject is occupying a great portion of both public and official attention.'[54] It prompted statisticians in Britain to ask what the best mode of statistical organisation was. As a scientific society dedicated to the promotion of statistics, the SSL engaged with the domestic and international discussion regarding the best model of a statistical organisation.

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[49] Hacking, *The Taming of Chance*, 28–29.
[50] Prévost and Beaud, *Statistics, Public Debate and the State, 1800-1945*, 70.
[51] Bourguet, 'Décrire, Compter, Calculer'. Hacking, 'Was There a Probabilistic Revolution, 1800-1930?', 51. Prévost and Beaud, *Statistics, Public Debate and the State, 1800-1945*, 67–68.
[52] Hacking, *The Taming of Chance*, 29–32.
[53] Brown, *The Board of Trade*, 3–4. For a brief summary of Bowring's idea, see Thompson, 'Census-Taking, Political Economy and State Formation in Britain, c. 1790-1840,' 176–179.
[54] *Second Report from the Select Committee on Public Documents: With the Minutes of Evidence, and an Appendix*. UK House of Commons Papers, 1833, (717), 52, q505.

Statisticians knew that they had to earn and maintain trust in the statistical data they provided because, as they were made aware, statistical numbers were often treated with scepticism. What statisticians were facing was a common problem regarding the mobility of facts.[55] While each observation had to be made at a particular location, at a particular time, and by a particular individual or group of individuals, it had to be accepted by anyone at any place and time. Otherwise, statisticians could not aggregate fragments of information collected at respective localities into regional-level statistics, and even further to national-level statistics.[56] The issue was that the mobility of facts could be easily jeopardised, as gaining factual status for any observation was a practical achievement. Contradictory reports would undermine the credibility of apparently reliable observations and, subsequently, relegate them to mere artefacts as opposed to genuine facts. Observational practices played a vital role in establishing the factual status of observations for each case. Statisticians also collectively endeavoured to establish and maintain social and scientific institutions to stabilise the facticity of observations and assure the aggregability of those collected facts, as they were keenly aware that their scientific project hinged on whether they could maintain the smooth travel and aggregation of facts. The theory of a statistical office was discussed in relation to the institutional basis of statistical observation.

As the discussion developed, however, statisticians became aware that official statistics were often divided by ministerial lines and designed to serve only the specific interests of specific departments. In addition to geographical mobility, contextual mobility was further required to produce complete and general statistical data. The SSL members promoted the Central Statistical Commission (CSC) model proposed by the eminent Belgian statistician Adolph Quetelet[57] in order to establish and maintain both types of

[55] Sociologists and anthropologists have paid close attention to how things come to be accepted as facts. For example, see Harold Garfinkel, Michael Lynch, and Eric Livingston, 'The Work of a Discovering Science Construed with Materials from the Optically Discovered Pulsar', *Philosophy of the Social Sciences* 11:2 (1981): 131–58. Michael Lynch, *Art and Artifact in Laboratory Science: A Study of Shop Work and Shop Talk in a Research Laboratory* (London: Routledge & Kegan Paul, 1985). ch.4. Bruno Latour and Steve Woolgar, *Laboratory Life: The Construction of Scientific Facts*, Second (Princeton, NJ: Princeton University Press, 1986).

[56] Porter's history of quantification also mentions the remarkable ability of numerical information, including statistical data, to travel across geographical boundaries. See Theodore M. Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton, NJ: Princeton University Press, 1995), viii–ix, 51.

[57] Adolphe Quetelet was arguably the most important statistician of his time. Today, he is remembered mostly for his ideas regarding the average man and social physics, but his contribution to early statistics is far more than that. He was the president of the Belgian Central Statistical Commission and the architect of the International Statistical Congress. For his life and other scientific achievements, see Kevin Donnelly,

mobility. As the CSC was designed to coordinate different regions and government offices' interests, it was considered to be instrumental in producing complete national statistics that were not bounded by regional or ministerial borders. The SSL's delegates actively participated in the ISC, conceived as an international version of the CSC, to further advanced this scheme.[58] With cooperation from other countries, Victorian statisticians envisaged introducing unity into international statistics.

A new conception of fact did not occur in a vacuum, as it involved the radical reorganisation of scientific practices and institutions in accordance with the newly shaped concept. Statisticians developed a new system of observation, a new style of representation, and a new form of scientific institution, which apparently laid the basis of the global statistical community of which Farr so energetically spoke. The expansion of the statistical community, in turn, gave rise to a new kind of people equipped with a new type of authority and ethos.

3. The Shaping of Social Scientists

In 1849, the SSL Council celebrated the expansion of the international statistical community in Britain as well as abroad. In its annual report, the Council highlighted the interdependence between statisticians and governments:

> Man in society is the subject of our study; to detect the influences which bear upon his welfare, our ultimate aim; inductive reasoning from phenomena observable and observed with mathematical precision, our method; and to make use of all evidence of this character which may be turned up in the daily working of society, as well as to collect new data, our necessity. Hence, while statesmanship and government are equally beyond our region, we may be as useful in supplying evidence to aid the legislatorial labours of the former as we are necessarily dependent upon the administrative operations of the latter for much of our evidence.[59]

Statisticians claimed that, while they heavily depended on administrative machineries for the collection of facts, they were capable of helping state legislation in return. Statisticians conceived their science as an empirical science of society and studied humans as social beings, distinguished from natural beings. People's health conditions, their economic

Adolphe Quetelet, Social Physics and the Average Men of Science, 1796–1874 (London: Routledge, 2015). For his contribution to the theory of a statistical office, see Chapter Three of this thesis.

[58] For an overview of the ISC, see Randeraad, *States and Statistics in the Nineteenth Century*.

[59] 'Fifteenth Annual Report of the Statistical Society of London', *Journal of the Statistical Society of London* 12:2 (1849), 98.

activities, and, in fact, every aspect of human lives fell in the domain of statistics.[60]

Victorian statisticians became increasingly assertive of their scientific expertise over social affairs. Statisticians took advantage of the contemporaneous science reform movement starting in the late 1860s, in which British men of science questioned religion's relevance to the physical world and demanded their exclusive intellectual authority over natural phenomena.[61] Similarly, the SSL led the campaign to demand the public recognition of sciences that study human beings in society. William Guy[62] wrote the SSL's manifesto, which defined social science as a genuine field of science and distinguished it from art and literature. Scientific knowledge should be, according to Guy, divided into two major domains: natural knowledge and human knowledge.[63] Guy insisted that the SSL, as the leading society of social science, had exclusive authority over human knowledge, because '[t]he "natural knowledge" which the Royal Society was founded to improve did not comprise the study of man himself as the unit of communities and nations, but only as an organised living being'.[64]

Victorian statisticians portrayed themselves as new experts of social issues whose knowledge was relevant to practical policy making. Their move can be seen as their strategic self-promotion in pursuit of securing their positions in the government machinery.[65] The idea of social scientific expertise appeared particularly attractive to the

[60] For statisticians' promotion of vital statistics in Britain, see Schweber, *Disciplining Statistics*.

[61] For the endowment of research movement, see Roy M. Macleod, 'The Support of Victorian Science: The Endowment of Research Movement in Great Britain, 1868–1900', *Minerva* 9:2 (1971): 197–230. Also, see D. S. L. Cardwell, *The Organisation of Science in England*, Revised (London: Heinemann Educational, 1972), 111–126. Frank M. Turner, 'Rainfall, Plagues, and the Prince of Wales: A Chapter in the Conflict of Religion and Science', *Journal of British Studies* 13:2 (1974): 46–65; Frank M. Turner, 'The Victorian Conflict between Science and Religion: A Professional Dimension', *Isis* 69:3 (1978): 356–76.

[62] William Guy was the professor of forensic medicine at King's College. He was one of the most dedicated members of the SSL. Guy was the editor of the *JSSL* in 1852–1856, vice president in 1869–1872, and president in 1873–1875. He contributed almost 40 papers to the *JSSL* during his life. Guy played a vital role in the SSL's campaign for government support, and after the SSL's plan failed, Guy bequeathed an unusual sum of about £7,000–£8,000 to the SSL. In 1892, the RSS created the Guy Medal in his honour. 'Proceedings on the 15th December, 1885', *Journal of the Statistical Society of London* 49:1 (1886), 17. Also, see 'Proceedings of the Fifty-Second Anniversary Meeting', *Journal of the Statistical Society of London* 49:3 (1886), 532;. For Guy's *ODNB* entry, see Bettany, G. (2009, May 21). Guy, William Augustus (bap. 1810, d. 1885), physician and statistician. *Oxford Dictionary of National Biography*. Ed. [accessed on 7 Oct. 2018]

[63] William Augustus Guy, 'On the Claims of Science to Public Recognition and Support; With Special Reference to the So-Called "Social Sciences."', *Journal of the Statistical Society of London* 33:4 (1870), 436.

[64] Ibid, 436.

[65] Jon Agar, *The Government Machine : A Revolutionary History of the Computer* (Cambridge, MA; London: MIT Press, 2003), Ch. 3.

rising middle-class men who were ambitious to replace the old ruling classes.[66] Statisticians' ambitious claim, however, was often greeted with scepticism, if not outright hostility. Notwithstanding statisticians' supposed expertise in understanding social problems, it appeared to non-statisticians that statisticians were incapable of understanding the actual suffering of people in need. In 1854, Charles Dickens' social satire *Hard Times* portrayed the statistical enthusiast Thomas Gradgrind as a person who was absorbed in faceless statistical numbers while ignoring the social reality directly in front of him. Mr. Gradgrind, Dickens wrote, 'had no need to cast an eye upon the teeming myriads of human beings around him, but could settle all their destinies on a slate, and wipe out all their tears with one dirty little bit of sponge'.[67]

Statisticians' apparent blindness to the real conditions of people led to questioning their practical utility in alleviating social problems. Statisticians appeared to be heartless number crunchers who lacked the ability to understand, sympathise, and help actual people. Even worse, they appeared to be mere frauds who performed hocus-pocus to serve their own interests. The public status of social scientific knowledge and statisticians' privileges and responsibilities were in negotiation throughout nineteenth-century Britain.

Statisticians' defence for their way of observing society appears more than a strategic move to bolster their social status, as statisticians' claim to their intellectual scientific merits often carried a strange moral tone. Their way of knowing was apparently entangled with their way of being. Merton's classical study on scientific ethos explains that scientists mould themselves to fit unique normative expectations, such as organised scepticism, and become a peculiar type of moral being.[68] They train themselves to critically assess presented evidence and to question even well-accepted beliefs, although such systematic exercise of scepticism is often unwelcome outside the scientific

[66] Lawrence Goldman, 'The Social Science Association, 1857-1886: A Context for Mid-Victorian Liberalism', *The English Historical Review* 101:398 (1986), 132–133. Lawrence Goldman, 'Experts, Investigators, and the State in 1860: British Social Scientists through American Eyes', in *The State and Social Investigation in Britain and the United States*, ed. Michael J. Lacey and Mary O. Furner, Woodrow Wilson Center Series (Cambridge: Cambridge University Press, 1993); Eileen Yeo, *The Contest for Social Science: Relations and Representations of Gender and Class* (London: Rivers Oram, 1996) , Ch. 4 and 5 in particular.

[67] Charles Dickens, *Hard Times for These Times*, ed. Kate Flint (London ; New York: Penguin, 2003), 95.

[68] Robert King Merton, *The Sociology of Science: Theoretical and Empirical Investigations* (Chicago: University of Chicago Press, 1973), Ch. 13. Also, see a special issue on 'scientific persona' in *Science in Context* (2003) 16:1/2, edited by Lorraine Daston and H. Otto Sibum. For recent issues specialised in scientific persona, see *Low Countries Historical Review* (2016), 131:4 and *Persona Studies* (2018), 4:1, although both edited volumes are apparently more interested in scientists' self-fashioning.

community.[69] Similarly, statisticians appear to have created and firmly embraced a new type of scientific ethos.[70]

In the 1870s, the SSL honoured the widely venerated prison reformer John Howard[71] as one of the founding figures of the SSL. The SSL's narrative painted statisticians' supposed blindness to individuals as the product of self-discipline.[72] Statisticians learned to dismiss 'obvious' causes of social issues based on their own limited perceptions and instead trust thoroughly collected statistical facts. They disciplined themselves not to draw any conclusion until they saw statistical facts in their entirety. In other words, statisticians apparently constituted themselves as social scientists who should be faithful to statistical facts. They were trying to establish both a moral and intellectual superiority to their contenders in the field of social observation. Statisticians' denunciation of impressionable artists' vanity in their supposedly exceptional observational skills and sentimental philanthropists' indulgence in the symptomatic treatment of social problems suggests that statisticians' embrace of statistical facts was motivated by their sense of morality, as well as their efficacy in the production of knowledge.

The SSL's activities appear to have created a new generation of social scientists who embraced the unique ethos and, accordingly, created new ways of observing and interacting with people. Statisticians' demands for the recognition of human knowledge in practical legislative discussion on the management of people apparently contributed to the historical formation of human science whose knowledge would mould the treatment of the people they study.

Statisticians' activities paved the way for the rise of human sciences, which studies humans in society and whose domain covers a broad range of scientific disciplines, such as sociology, psychology, and epidemiology.[73] Human sciences are reflective in the sense that there is the interaction between scientific knowledge and the people whom scientists

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[69] Ibid, 277–278.

[70] Daston and Galison's history of objectivity studies historic changes in epistemic virtues and provides the best historical study of scientific self. Lorraine Daston and Peter Galison, *Objectivity* (New York :London: Zone Books, 2007). For the discussion about scientific self, Ch 1 and Ch. 4 are particularly relevant.

[71] John Howard was a philanthropist and a penal reformer in eighteenth-century Britain. For Howard's ODNB entry, see Morgan, Rod. 2004 "Howard, John (1726?–1790), philanthropist." *Oxford Dictionary of National Biography*. [accessed on 8 November 2018]

[72] William A. Guy, 'John Howard as Statist', *Journal of the Statistical Society of London* 36:1 (1873): 1–18; William A. Guy, 'John Howard's True Place in History. A Supplement to the Paper Entitled "John Howard as Statist."', *Journal of the Statistical Society of London* 38:4 (1875): 430–37.

[73] Ian Hacking, 'Making Up People', *London Review of Books* 28:16 (2006), 23.

study. Since humans become both object and subject of knowledge in human sciences, the knowledge produced by those sciences directly shapes our relationships with others and ourselves.[74]

Human scientific research often creates new kinds of people through the categorisation of their research objects.[75] The reflexive nature of human scientific knowledge is key to understanding statistics' generative power of making new objects of study and shaping social relations centred on those categories.[76] As Hacking points out, the rapid growth in statistical data-gathering among early nineteenth-century European countries produced numerous scientific categories of human beings as 'byproducts of the needs of enumeration'.[77] The enumeration of people was intended not only to ascertain the size of entire populations but also that of subgroups, which required many rigidly defined categories to classify people. The avalanche of printed numbers brought into existence an unprecedented amount of statistical categories as well as statistical documents.[78] Classification is a central topic of Hacking's philosophical project of 'making up people', which is concerned with how our conceptual possibilities of being are historically shaped through scientific categories.[79] Hacking's historical studies, such as the history of

[74] The following discussion about reflexivity in human sciences is partially influenced by the works presented by a group of ethnomethodologists in Japan, commonly known as the 'conceptual analysis group' among the Japanese sociological community. They examine the intersection of empirical sociological research and Hacking's philosophical ideas, such as looping effects. For their manifesto, see Taito Sakai et al., eds., *Conceptual Analysis in Sociology: Essays on Human Sciences and Experiences in Our Daily Lives* (Kyoto: Nakanishi-ya, 2009). [in Japanese. The Japanese original title is the following: 酒井泰斗・浦野茂・前田泰樹・中村和生『概念分析の社会学：社会的経験と人間の科学』ナカニシヤ出版].

[75] Hacking, 'How Should We Do the History of Statistics?', 182. For a detailed study of the development of the classification of occupations, see Simon Szreter, *Fertility, Class and Gender in Britain, 1860-1940* (Cambridge: Cambridge University Press, 1996), Ch.2.

[76] For the historical example of making up people through statistical categorisation, see Cohn's paper on the objectification of Indian caste system: Bernard S. Cohn, 'The Census; Social Structure and Objectification in South Asia', in *An Anthropologist among the Historians and Other Essays* (Delhi ; New York ; Oxford: Oxford University Press, 1987), 222–254. For the reflexive inquiry of statistical categorisation, see Desrosières, *The Politics of Large Numbers*. and Simon Szreter, Hania Sholkamy, and A. Dharmalingam, eds., *Categories and Contexts: Anthropological and Historical Studies in Critical Demography*, International Studies in Demography (Oxford: Oxford University Press, 2004). Ch. 1 and Ch. 2 in particular.

[77] Hacking, 'The Avalanche of Printed Numbers', 280.

[78] Ibid, 292.

[79] For Hacking's making up people project, see Ian Hacking, 'The Looping Effects of Human Kinds', in *Causal Cognition: A Multidisciplinary Debate*, ed. Dan Sperber, David Premack, and Ann James Premack (Oxford; New York: Clarendon Press ; Oxford University Press, 1995), 351–94; Ian Hacking, 'Historical Ontology', in *Historical Ontology* (Cambridge, MA; London: Harvard University Press, 2002), 1–26; Ian Hacking, 'Making Up People', in *Historical Ontology* (Cambridge, MA; London: Harvard University Press, 2002), 99–114; Hacking, 'Making Up People', 2006. Ian Hacking, 'Kinds of People: Moving Targets', *Proceedings of the British Academy* 151 (2007): 285–318. Also see his lecture ''Making Up People' Reconsidered' delivered on 15 May 2013 at Northumbria University. An audio clip can be requested from the following URL (http://fashionablediseases.info/hacking.php). For examples of his analysis, see Ian

multiple personalities, describes how a particular way of being became available to us or, in the case of his study of mad travellers, ceased to exist at a certain point in history.[80]

Hacking describes the reflexive relationship between knowledge and the known in human sciences as the intersection among the axes of knowledge, power, and ethics. His idiosyncratic use of those words, particularly power, may require further explanation.[81] Power, in this context, is not about the illegitimate use of force on vulnerable people to control their behaviours against their wills. It is about how we have come to accept and legitimise certain ways of interacting with others. To illustrate how those axes cross each other in reality, Hacking uses the emergence of psychic trauma at the end of the nineteenth century as an example.[82] The notion of psychic trauma brought into existence as a new object of study people identified as victims of traumatic experiences, which, in turn, created fields of study such as psychological traumatology and victimology. The accumulation of scientific knowledge about those victims shaped our way of treating people with psychic trauma, providing power for victims to bring justice to their abusers, for soldiers to claim state support for their treatment of posttraumatic stress disorder, and, we may add, for psychiatrists to listen to and advise on the most intimate matters of their clients.[83] Scientific knowledge about trauma also produced a new type of moral agent with a new form of responsibility. Childhood trauma could be used in an attempt to explain one's lack of empathetic abilities and excuse their antisocial behaviours.

The reflexivity in human sciences can cause what Hacking calls looping effects. The creation of a new classification specifies the subjects of study for whom scientific knowledge will be accumulated.[84] Produced knowledge specifies the forms of legitimate treatment and the distribution of rights and responsibilities of interventions among interested parties. Interventions for people in a certain category changes the state of those people and renews the knowledge of that very category, which in turn modifies the mode of intervention and redistributes rights and responsibilities among stakeholders.

Hacking, *Rewriting the Soul: Multiple Personality and the Sciences of Memory* (Princeton, NJ: Princeton University Press, 1995); Ian Hacking, *Mad Travelers: Reflections on the Reality of Transient Mental Illnesses*, Page-Barbour Lectures for 1997 (Charlottesville VA; London: University Press of Virginia, 1998).

80 Hacking, *Rewriting the Soul*; Hacking, *Mad Travelers*.

81 Hacking takes those three axes, as well as the very expression of historical ontology, from Michel Foucault's short essay. See, Michel Foucault, 'What Is Enlightenment?', in *Ethics: Subjectivity and Truth*, ed. Paul Rabinow, trans. Catherine Porter (New Press, 1997), 318.

82 For the following discussion, see Hacking, 'Historical Ontology', 17–20.

83 Ibid, 18.

84 The following is my reconstruction of Hacking's argument. For his own summary, see Hacking, 'Kinds of People', 292–293.

While Hacking gives a general description of looping effects, he dismisses the idea of a general theory for making up people because each category has its own unique history.[85] This might lead us to conclude that historians' contributions to the 'making up people' project can be made only through accumulating detailed case studies of category formation, such as 'multiple personalities'. However, historians can study the historical preconditions of 'making up people'. Making up people presupposes the existence of a scientific classification of human beings, institutional backgrounds that allow the production and exchange of scientific knowledge, and experts equipped with such knowledge.[86] These conditions came into existence at a particular place and a particular time in history. Early statistics apparently played a significant role in bringing those conditions into existence. Statisticians coordinated statistical observation, multiplied statistical classifications, and built up knowledge on new kinds of people; their demand for public recognition of their science gave rise to a field of human knowledge and produced numerous experts, who made statistical classifications and applied them to actual people. The historical inquiry of early statistics should reveal the historical formation of our world, where people see and are seen through the lens of statistical categories and their fate is shaped through those categories.

The SSL's activities moulded concepts, practices, and institutions, which helped expand the statistical community and provided the foundation for the global circulation of statistical facts. The SSL helped create a unique scientific ethos, whose intellectual and moral appeal attracted statisticians to faithfully engage with the statistical observation of people in society. The SSL's operations paved the way for the formation of human sciences. The SSL was a central scientific society that created a new way of knowing and opened up new possibilities of interacting with others and ourselves. While the importance of the SSL has been recognised among historians, little attempt has been made to understand the SSL's activities in its entirety.[87] My thesis provides a comprehensive

[85] Ibid, 297. For Hacking's explicit denial of his interest in making a general theory of making up people, see his interview: Ole Jacob Madsen, Johannes Servan, and Simen Andersen Øyen, '"I Am a Philosopher of the Particular Case" An Interview with the 2009 Holberg Prizewinner Ian Hacking', *History of the Human Sciences* 26:3 (2013), 36–37.

[86] Hacking, 'Kinds of People', 295

[87] The most extensive historiography of the SSL still remains a centenary volume, published in 1934 by the Royal Statistical Society, the successor of the SSL. The book is a precious source of information, as it chronicles events in the SSL in great detail, but its main purpose is to honour the SSL's history not provide a scholarly study of the SSL's activities. Royal Statistical Society, *Annals of the Royal Statistical Society, 1834-1934* (London: Royal Statistical Society, 1934). For the establishment of the SSL, Hilts and Goldman provide brilliant historical accounts. activities Hilts, 'Aliis Exterendum'. Goldman, 'The Origins of British "Social Science"'.

picture of the SSL's activities and its contribution to the formation of early statistics in Britain.

4. Structure of the Thesis

My thesis is divided into two parts: the first three chapters examine early statistics' knowledge production and describes how the SSL shaped the concept of statistical fact and the practices of statistical data-gathering; and the last two chapters discuss early statistics' role in the formation of human sciences and answer the question of how the SSL created a field of knowledge that legitimised a specific form of social intervention and cultivated a specific form of scientific ethos. The chapters are organised thematically but roughly in chronological order.

Chapter One examines the SSL-funded statistical inquiries of its early days in relation to statisticians' organisation of coordinated statistical observation. The SSL ceased to conduct original surveys and became increasingly dependent on official statistics after 1848. Statisticians' acceptance of official statistics could have caused tension with their scientific mission of collecting facts since government agents' fitness for statistical observations was uncertain. This chapter argues that statisticians developed a system of hierarchical division of labour and the questionnaire design in order to simplify the task of observation and minimise the observers' leeway to exercise individual observational skills. This arrangement allowed statisticians to mobilise numerous government agents for statistical observation, as anyone supposedly could function as competent observers. Statistical fact was accordingly conceived as the aggregation of separately collected small quantities of information.

Chapter Two examines the SSL's creation of the *JSSL* in 1838 and explores how the new concept of fact shaped the literary practices among statisticians. The SSL Council claimed that making a large data set out of already observed but dispersed facts was as useful as making fresh statistical observation. The marginalisation of the role of individual statistical observers further diminished the value of first-hand observation in statistical data-gathering. It led statisticians to envisage the *JSSL* as a virtual depot of those existing facts. This chapter argues that the depreciation of the direct observation prompted the *JSSL* to accept gleaning information from existing literature as a legitimate method of collecting statistical facts, which subsequently shaped statisticians' writing and reading practices.

Chapter Three examines the SSL's endorsement of the Belgian CSC model and the ISC and discusses the institutional basis for the mobility of statistical facts. Statisticians were frustrated with disorder in statistical documents published by governmental offices and demanded the creation of a central statistical organisation that could produce complete statistical data, which prompted them to discuss the best model for a central statistical office. As the discussion developed, statisticians became aware that statistical facts required both geographical and contextual mobilities to cross both regional and ministerial divides in official statistics. This chapter argues that Victorian statisticians' promotion of the Belgian CSC model in Britain and its active participation in the ISC disseminated their vision for the future global statistical community based on internationally comparable statistical data.

Chapter Four examines the SSL-led campaign for governmental patronage and discusses the making of statisticians' scientific expertise over human lives. In the 1860s, the SSL and other London-based societies placed the joint request for the government to support the erection of a building that would accommodate those scientific societies engaging in social sciences. The ostensible purpose of this demand was to gain state funding for social science, but its scope was more ambitious, as what was at stake was whether social science could have exclusive intellectual authority over human knowledge, distinguished from natural knowledge. This chapter argues that the SSL's campaign paved the way for the formation of human sciences.

Chapter Five examines the SSL's commemoration of John Howard and discusses the creation of social scientific ethos. Statisticians' unintuitive way of observation persistently aroused suspicion of their competence and integrity. To counter the lingering scepticism, the SSL presented well-respected Howard as an exemplary statistician in the 1870s. This chapter argues that the SSL's narrative of Howard helped bolster statisticians' scientific ethos and created a new kind of intellectual inquirer who, while cordially sympathising with the suffering of people in front of them, disciplined themselves not to draw a conclusion until they saw statistical facts in their entirety.

5. Sources and Methods

The main primary sources consulted for my thesis are grouped into three categories: the Royal Statistical Society (RSS) archival materials, the SSL's publications, and other

materials. The RSS archives keep the unpublished materials related to the SSL's activities because the RSS and the SSL are essentially the same organisation. The SSL renamed itself the RSS when it received a royal warrant in 1887.

The first category includes the SSL's manuscripts, internally circulated printed materials, the Newmarch Papers, and the SSL's historical books collection. The SSL's Council Minutes (RSS: B2) are vital primary sources, as they tell us of the SSL's activities and reflexive observation on its performance. The Council Minutes cover from its first meeting in 1834 to 1994 without a break and record the SSL's proceedings at the regular Council meetings, which are not covered by the annual council reports published in the *JSSL*. The SSL's committees' minutes (RSS: B5, B6, B7) are also important materials. As I will explain in detail in Chapter One, the SSL adopted committee systems dedicated to specific branches of statistics. Committees engaging with medical statistics and education statistics were particularly active and conducted original data-collection activities. While those committees did publish their official reports in the *JSSL*, the minutes provide invaluable information that is omitted from published reports, such as the selection process for appointing survey agents.

The Newmarch Papers include scholarly manuscripts and the correspondence of William Newmarch, who was one of the SSL's prominent fellows.[88] Newmarch was a banker and actively engaged in social scientific discussions. He became a member of the SSL in 1847 and then a member of the Political Economy Club in 1855. He was also elected as a fellow of the Royal Society in 1861. He was an SSL honorary secretary during the years 1854–1862, the *JSSL*'s editor in 1856–1862, and the SSL president in 1869–1871. He was also the president of Section F in 1861. Newmarch was mainly interested in economic statistics and was an active contributor to the *JSSL*. The Newmarch Papers were bequeathed to the SSL after his death in 1882. Since my thesis is interested in the SSL's activities as a scientific society as opposed to individual statisticians' achievements, little of the Newmarch Papers is relevant to my thesis. It is important to note, however, that the Newmarch Papers contain invaluable documents relating to the Tooke Memorial. Newmarch was a collaborator of political economist Thomas Tooke,[89] and after Tooke's

[88] For further biographical information of Newmarch, see his Oxford Dictionary of National Biography (ODNB) entry. Deane, Phyllis. 2004 'Newmarch, William (1820–1882), economic statistician.' *Oxford Dictionary of National Biography.* [accessed on 6 Oct. 2018.]

[89] Thomas Tooke was a political economist. He is remembered today for his work *History of Prices*. For his *ODNB* entry, see Murray, G. H. 2015 'Tooke, Thomas (1774–1858), economist.' Oxford Dictionary of National Biography. [accessed on 13 Oct. 2018]

death in 1858, Newmarch took a leading part in the effort to create the Tooke professorship for economic science and statistics at King's College London. As the Tooke professorship is apparently the first professorship in Britain to explicitly include statistics in its job title, the Newmarch Papers would be essential materials for future researchers who are interested in the role of the university in the formation of statistical science.

As for the SSL's historical books collection, the RSS archives hold only the oldest books, and the majority of the collection is deposited at the Albert Sloman Library at the University of Essex. While my thesis does not examine the collected books themselves, Chapter Two of my thesis studies the SSL's ideal of a complete statistical library and catalogue, casting light on the SSL's data-management activities.

The second category is mainly the SSL's periodicals. Before the SSL received the royal warrant, it published three periodicals: the *Proceedings of the Statistical Society of London* (*PSSL*) in 1834–1837, the *Transaction of the Statistical Society of London* (*TSSL*) in 1837, and the *JSSL* in 1838–1886. Those periodicals are vital primary resources for my thesis, as they are the chief products of the SSL's scientific activities.

The last category includes books and articles related to the SSL's activities that were written by active SSL members. Examples include William Guy's biographical sketch of John Howard, whom Guy, as the SSL president, commemorated as the founding father of statistical inquiry. Parliamentary reports relating to statistics also fall into this category. Examples include reports from the SCPD, which posed questions about the best model for the central statistical office for the first time in British history.

My method of analysis is a critical reading of the SSL's manuscript and published materials. Through careful examination of these documents, I provide a 'thick description' of scientific activities at the SSL.[90] As for the examination of the SSL's periodicals, a further comment is necessary to clarify my approach. My thesis analyses not only what statisticians argued but also how those arguments were presented and what they attempted to achieve through their arguments. Moreover, my thesis studies the *JSSL* in its own right as opposed to a transparent carrier of scientific papers. As I discussed previously, statisticians developed a unique writing style. The *JSSL* was designed as a virtual sphere

[90] Clifford Geertz, "Thick Description: Towards an Interpretative Theory of Culture," in *The Interpretation of Cultures; Selected Essays* (New York: Basic Books, 1973). Robert Darnton, *The Great Cat Massacre: And Other Episodes in French Cultural History* (London: Allen Lane, 1984).

where statisticians could cooperate with each other in accordance with the conception of early statistics as a collaborative scientific project of collecting data. From this perspective, the *JSSL* cannot be reduced to a bundle of research papers, as the management of the *JSSL* itself was part of the SSL's activities. While previous studies have examined individual articles in the *JSSL*, no serious attention has been paid to the nature of the *JSSL* as a medium. My thesis analyses this unnoticed aspect of the SSL's published materials.

Chapter One

Faceless Facts, Nameless Gatherers

The Statistical Society of London and the Expanding Community of Observers in Statistics, 1834–1848

1. The Use of the Questionnaire in Statistical Observation

Caption: 'Absent-minded Householder (who takes the Census returns very seriously), "Ah Martha James – er, widow? – er, age? H'm – Thirty-Five, H'm – Male or Female?" / Cook (indignantly), "FEMALE!"' (*Punch*, 29 March 1911).

On 29 March 1911, a few days prior to the census day, a satirical image of a statistical enthusiast was published in the British humour magazine *Punch*. The man in the image is described as a head of a household who takes the census very seriously. He is filling in the census schedule for his cook and checking her name, marital status, and age. He is so absorbed with accurately completing the form that he does not see the obvious fact before his eyes. 'Male or Female?' he mechanically asks. 'FEMALE!' his female servant replies angrily.

The satire takes aim at the apparent blindness of statistical observation. The man reduces an actual human to mere numbers and categories. He does not even look at the person he

is observing. It is perhaps natural to question how such a superficial way of observing people could produce genuine knowledge about actual human beings. By the time this picture was published, criticism of the shallowness of statistical observation was not particularly original.[1] What makes the picture interesting is that it captures the strange seriousness with which the man treats a printed form for collecting statistical data. While his method of observation appears absurd to the female cook, the man firmly embraces this unintuitive way of seeing and faithfully asks questions printed on the paper even when the answers are obvious.

In 1799, two years prior to the first census in the United Kingdom,[2] John Sinclair[3] published the final volume of the *Statistical Account of Scotland*. His *Statistical Account* marked the beginning of the history of statistics in Britain. Sinclair is remembered today for introducing the word 'statistical', taken from German, into the Anglophone world as a mode of social observation. The Statistical Society of London (SSL) counted Sinclair as one of the few founders of statistics in Britain.[4] However, the nature of Sinclair's statistical observation appeared very different from his supposed descendants a century later.

Sinclair's work was a collection of returns to his questionnaire originally circulated in May 1790, along with five additional questions in January 1791, to all 938 parishes in Scotland.[5] The original questionnaire contained no less than 166 questions. The clergies were asked: 'What is the ancient and modern name of the parish?'; 'What is the general appearance of the country?'; 'Is it flat or hilly, rocky or mountainous?'; 'What is the

[1] See also Chapter Five of this thesis.

[2] For the history of census-taking in the United Kingdom, see D. V. Glass, *Numbering the People: The Eighteenth-Century Population Controversy and the Development of Census and Vital Statistics in Britain* (Farnborough: D.C. Heath, 1973). Edward Higgs, *Making Sense of the Census Revisited: Census Records for England and Wales 1801-1901, a Handbook for Historical Researchers* (London: Institute of Historical Research, 2005); Stephen John Thompson, 'Census-Taking, Political Economy and State Formation in Britain, c. 1790-1840' (PhD thesis, University of Cambridge, 2010).

[3] John Sinclair was a Scottish agricultural reformer. During his tour in Germany, Sinclair first learned statistics as an effective form of social inquiry and introduced statistics to the Anglophone world. His twenty-one volume Statistical Account of Scotland, published between 1791 and 1799, is considered one of the most important statistical works in British history. For his biography, see Rosalind Mitchison, *Agricultural Sir John: The Life of Sir John Sinclair of Ulster, 1754-1835* (London: Geoffrey Bles, 1962). For Sinclair's *Oxford Dictionary of National Biography* (*ODNB*) entry, see Mitchison, Rosalind. 2015 'Sinclair, Sir John, first baronet (1754–1835), agricultural improver, politician, and codifier of "useful knowledge".' *Oxford Dictionary of National Biography.* [accessed on 9 Nov. 2018]

[4] Statistical Society of London, 'Introduction', *Journal of the Statistical Society of London* 1:1 (1838), 3.

[5] Donald J. Withrington, 'General Introduction', in *The Statistical Account of Scotland*, ed. Donald J. Withrington and Ian R. Grant, 1 vols (East Ardsley: EP Publishing Limited, 1983), xviii. Adam Fox, 'Printed Questionnaires, Research Networks, and the Discovery of the British Isles, 1650–1800', *The Historical Journal* 53:3 (2010), 620.

nature of the soil? Is it fertile or barren, deep or shallow?'[6] It was not an easy feat to complete those questions, as observers were asked to furnish comprehensive accounts of each parish. The clergies apparently had to spend a large amount of time and effort to complete the questionnaire.[7] The task was so demanding that Sinclair had to use various means, including political influence through his connection with the General Assembly of the Church of Scotland and Scottish aristocrats, to put pressure on those reporters to actually complete and return their observations to him.[8]

The returned reports were extensive. Sinclair needed twenty-one volumes to cover all the observations he collected from those reporters. Although Sinclair's questionnaire specified the types of information to be provided, it hardly succeeded in standardising observers' writing.[9] The extent, thoroughness, and style of observation varied greatly according to each clergy's degree of knowledge, passion, and skill for making observation.[10] The style of writing also varied from one reporter to another. Some preferred an anonymous writing style, while others took advantage of voicing their concerns through their observations.[11] Sinclair recognised those observers' authorship and kept the names of original authors unless they chose to remain anonymous.[12] Sinclair's survey yielded observations filled with rich details of the respective locality, which resembled more antiquarian descriptions than statistical ones in the modern sense.[13]

The nature of statistical observation apparently changed dramatically throughout nineteenth-century Britain. The role of statistical reporters in statistical observation was remodelled accordingly. New statistical observers were denied authorship of their questionnaire returns, as they no longer liberally exercised their observational skills. They were supposed to faithfully fill in a preformed census schedule. As the caricature from *Punch* shows, this new form of observation appeared odd to some. It poses questions: how could one embrace such a peculiar way of seeing; what prompted statisticians to give up rich and descriptive observation and adopt an apparently superficial sketch of individuals; and why did the returns from nameless observers become the basis of

[6] John Sinclair, *Queries Drawn up for the Purpose of Elucidating the Natural History and Political State of Scotland* (Edinburgh, 1790).
[7] Withrington, 'General Introduction', xi.
[8] Ibid, xii. Mitchison, *Agricultural Sir John*, 123.
[9] Withrington, 'General Introduction', xx.
[10] Mitchison, *Agricultural Sir John*, 124.
[11] Withrington, 'General Introduction', xxiv.
[12] Ibid, x.
[13] Ibid, xviii–xx. Fox, 'Printed Questionnaires', 620.

statistical fact? This chapter addresses these questions.

My argument is that the SSL developed a scientific system of coordinated statistical observation that shaped the form of statistical fact and laid a basis for the statistical community. The SSL's system of statistical observation marginalised the enumerators' role in the process of fact-gathering with the help of the questionnaire, statistical classification, and the division of labour between enumeration and abstraction so that it could turn ordinary persons into competent enumerators. This arrangement of coordinated statistical observation allowed statisticians to accommodate petty observers into the statistical community, where those observers would bring facts for further aggregation while superior statisticians would decide the best mode of investigation. Since there was little capacity required for local observers, the statistical community had no trouble turning to governments for the deployment of legions of enumerators. The use of nameless enumerators and the aggregation of individual observerations, in turn, shaped the nature of statistical facts. Statistical facts were conceived as impersonal, as the statistical observation deprived observers of leeway to exercise their personal observational skills and aggregated statistical facts belonging to no particular individual observer. To demonstrate these points, this chapter examines the SSL's data-gathering activities from its establishment in 1834 to its discontinuation of original survey projects in 1848.

2. Establishment of the Statistical Community

2-1. 'Uncritical' Victorian Statisticians

The foundation of the SSL has received much attention from historians for its manifesto for the collection of social facts, which is differentiated from mere opinion.[14] The SSL's oft-cited Prospectus declared:

> The Statistical Society will consider it to be the first and most essential rule of its conduct to exclude carefully all opinions from its transactions and publications,—to confine its attention rigorously to facts,—and, as far as it may be found possible, to facts which can be stated numerically and arranged in tables.[15]

[14] Victor L. Hilts, 'Aliis Exterendum, or, the Origins of the Statistical Society of London,' *Isis* 69:1 (1978): 21–43. Lawrence Goldman, 'The Origins of British 'Social Science': Political Economy, Natural Science and Statistics, 1830-1835,' *The Historical Journal* 26:3 (1983): 587–616. M. J. Cullen, *The Statistical Movement in Early Victorian Britain: The Foundations of Empirical Social Research* (Hassocks: Harvester Press, 1975). Ch. 6; Poovey, *A History of the Modern Fact*, Ch,7.

[15] 'Prospectus of the Objects and Plan of the Statistical Society of London,' in *Report of the Third Meeting of the British Association for the Advancement of Science; Held at Cambridge 1833* (London: John Murray,

Historians have also noticed an apparent gap between the SSL's original cause for the collection of facts and its termination of social inquiries in 1848.[16] To account for the gap, historians have mainly drawn on the SSL's financial difficulties and its uncritical acceptance of governmental statistics.[17] Although these factors may seem to provide sufficient explanation for the SSL's withdrawal from original surveys, they pose another question of how the SSL could survive on such a weak footing. Renamed as the Royal Statistical Society (RSS) in 1887, the SSL continues to exist today, while all other provincial statistical societies, except the Manchester Statistical Society (MSS), collapsed shortly after their establishment.

Moreover, a close examination of the SSL's financial situation indicates that a financial factor does not sufficiently account for the gap.[18] Figure 1 on next page is drawn from the auditors' reports of the SSL and shows changes in 'total receipts', 'cash', and 'liabilities' from its establishment in 1834 to 1877. After the first few years, when the SSL made a large investment in stocks from its original funds, the Council basically aimed to balance its income and expenditures. The difference between 'cash' and 'liabilities' in figure 1 can thus be used as a rough indicator for the SSL's financial state.[19] Until the end of 1838, the SSL had a large amount of cash that exceeded its liabilities. In 1839, the SSL faced relatively large liabilities, more than £300, for the first time, and in the following years, it tried to reduce the debt by cutting unnecessary expenses. The cash and liabilities were almost balanced in 1843 and then again in 1845, but the liabilities overwhelmed the cash again in 1846. The SSL ceased to conduct original survey projects after its final execution of that kind in 1848. This appears to confirm the hypothesis of financial difficulties, but figure 1 suggests a different story. In 1857, the SSL again succeeded in reducing its liabilities to less than the amount of cash it had. Afterward, the liabilities never exceeded the cash value, until 1874, when the SSL made a huge payment

1834), 492–95. 494.

[16] Victor L. Hilts, *Statist and Statistician* (New York: Arno Press, 1981), 94. Alain Desrosières, *The Politics of Large Numbers: A History of Statistical Reasoning* (Cambridge, Mass. ; London, 1998), 175.

[17] For the SSL's financial difficulties, Cullen, *The Statistical Movement*, 100. Also, see Philip Abrams, *The Origins of British Sociology, 1834-1914: An Essay with Selected Papers* (Chicago: University of Chicago Press, 1968), 136. For the suggestion of gullible statisticians, see Ibid, 20, 136. For Abrams' account of the early social investigations conducted by the SSL, see Ibid, 18–20.

[18] Auditors' Reports formed a part of the Council Reports. They were apparently circulated among the fellows of the Statistical Society. After the creation of the *Journal*, it was published in the *Journal*.

[19] The Statistical Society had other types of assets than cash. They include 'stock', 'arrears of subscription', 'furniture', 'books in library' and 'Journals in stock'. What counted as 'assets' changed over time and makes a comprehensive comparison difficult.

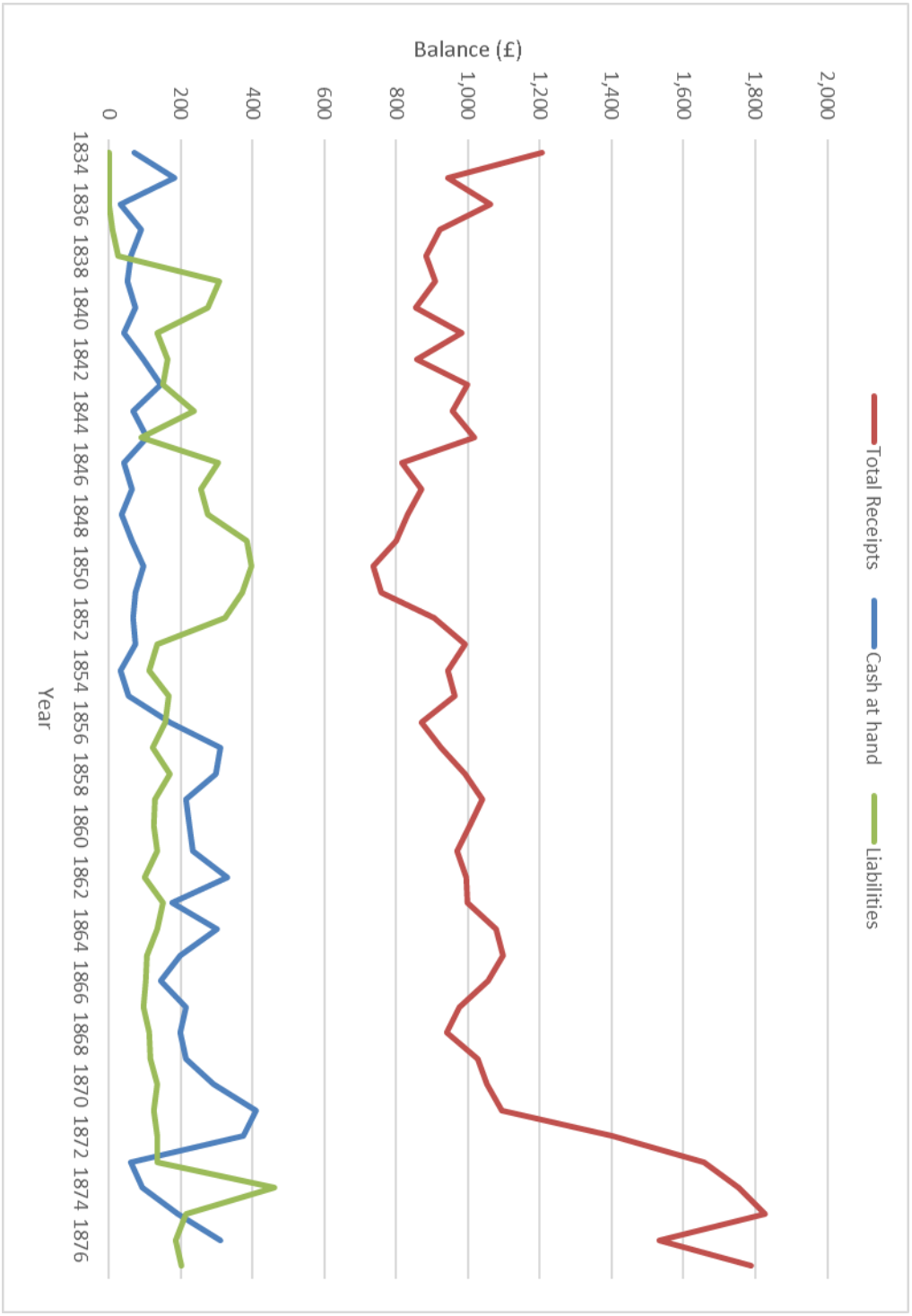

Figure 1. The Financial State of the Statistical Society of London 1834–1877

for its relocation to a new site. Between 1857 and 1873, the SSL was on sound financial footing. In fact, the SSL had enough funds to make an investment in stocks amounting to £600.[20] This demonstrates that, in the 1860s, the SSL had a large amount of cash that could have financed original surveys.

The examination of the SSL's auditors' reports casts doubts on the claim that financial difficulties alone prevented the SSL from conducting original inquiries and forced it to accept, although reluctantly, official statistics, as it was virtually the only realistic option.

2-2. New Facts and Existing Facts

The theory of credulous Victorian statisticians also appeared to contradict the SSL's conscious efforts to defend the scientific status of statistical facts. Just before its establishment, the SSL published its Prospectus in the 1834 report of the British Association for the Advancement of Science (BAAS).[21] The first paragraph proclaimed that the SSL was established mainly for the 'procuring, arranging, and publishing' of social facts.[22] In a further illustration of the collection of facts, the Prospectus divided fact-gathering activities into two types: 'collecting fresh statistical information' and 'arranging, condensing, and publishing much that already exists'.[23] Interestingly, the Prospectus claimed that the collection of new facts is 'only one part of the Society's work' and the collection of existing facts has 'equal usefulness' as that of new ones.[24]

The lack of preference for fresh facts over existing facts corresponded to the SSL's willingness to accept facts collected by third parties, which included governments. The Prospectus insisted on the benefit of opening and keeping constant communication with the Statistical Department at the Board of Trade, which became a permanent department just a year prior to the establishment of the SSL.[25] The Prospectus claimed, 'Without such a communication, constantly kept up, the Society [SSL] can never be assured that it is not doing unnecessarily what the Government is doing at the same time and better.'[26] The implicit assumption is that governmental fact-gathering activities were compatible with

[20] The Statistical Society purchased stocks in 1863 (£100), 1868 (£100), 1872 (£200) and 1873 (£200), some of which were sold to compensate a huge expense incurred for the removal in 1874.
[21] 'Prospectus of the Statistical Society of London.'
[22] Ibid, 492.
[23] Ibid, 493.
[24] Ibid, 494.
[25] See, Lucy Brown, *The Board of Trade and the Free-Trade Movement, 1830-42* (Oxford: Clarendon Press, 1958), 28. Also, see Chapter Three of this thesis.
[26] 'Prospectus of the Statistical Society of London.' 493. [] inserted for clarification.

the SSL's. Moreover, the Prospectus casually admitted the government's superiority over the SSL in the collection of new facts, which led the SSL to conclude survey activities, at least partially, could be left to the government and make the SSL's task 'less overwhelming'.[27]

The Prospectus further named potential collaborators.[28] The SSL was anxious to befriend societies, in Britain or on the Continent, that were interested in statistics and be 'communication with intelligent Englishmen about to travel abroad, with residents in the Colonies, and with colonial gentlemen resident in England'.[29] The use of travellers or residential observers in the Colonies was not uncommon among naturalists, although travellers' cursory observations were sometimes regarded as untrustworthy.[30] The SSL was also ready to accept information from colonial elites living in England. Moreover, the SSL envisioned that its leadership and guidance would spawn local statistical societies in 'every part of the British dominions' that would cooperate with the SSL.[31]

The SSL did not suddenly come to accept governmental statistics in the late 1840s, as it discussed the need of reliance on government even before its formal establishment. The SSL's equal treatment of new facts and existing facts suggests that the SSL was ready from the onset to accept the facts collected by someone else. In fact, the SSL saw the collection of facts as a joint enterprise and solicited contributions from various actors, including the British government. The SSL envisioned the statistical community emerging in Europe while placing itself in the centre of the network. The statistical community of which the SSL dreamed was already international, if not yet global. The Prospectus sketched the principles that the SSL would follow. Whether the SSL abided by or ignored them is another question. To answer this question, an analysis of the actual management of the SSL is necessary.

2-3. Navigating the Comprehensive Fields of Knowledge

Although the SSL's Prospectus maintained that the elicitation of existing facts had the same usefulness as the collection of new ones, the SSL had no intention of entirely giving

[27] Ibid, 493.
[28] Ibid, 494.
[29] Ibid, 494.
[30] Daniela Bleichmar, 'The Geography of Observation: Distance and Visibility in Eighteenth-Century Botanical Travel,' in *Histories of Scientific Observation*, ed. Lorraine Daston and Elizabeth Lunbeck (Chicago: University Of Chicago Press, 2011), 377–381.
[31] 'Prospectus of the Statistical Society of London,' 494.

up the execution of original surveys. It pursued original data collection for at least the first fifteen years. The Paper of Interrogatories project was the first of this kind, although, as I will show later, it ended up in failure. The SSL's Education Committee conducted the first successful original survey and published the report in 1837, with more surveys following. The SSL announced in 1840 the downsizing of original survey projects and repeated this in 1842 due to the financial burden attributed to these inquiries. Henry Hallam[32] and other fellows of the SSL offered their private funds to continue original surveys. In 1848, however, all the SSL's survey projects were terminated. In the course of these events, the SSL faced a dilemma between its responsibility for the collection of social facts and its limited capability for the execution of original surveys. The tension could have threatened the SSL's very existence, but the Council skilfully handled the issue and avoided the SSL's breakup.

The dilemma the SSL faced resulted from its definition of statistics as a comprehensive science of society. This move had strategic importance in elevating the status of statistics. Political economists like John McCulloch[33] often treated statistics as an auxiliary science and confined its role to the provision of raw data for the use of political economists.[34] As Goldman has uncovered, the SSL's particular attention towards facts was to combat Ricardian political economy, which, as the founding members of the SSL observed, depended on speculative reasoning and unrealistic assumptions.[35] Its wider scope supposedly allowed statistics to take over the highest position in the science of society from political economy, whose focus was narrowly limited to economic phenomena.

However, the 1836 Council Report shows that the comprehensiveness of statistics brought a heavy burden to the SSL:

> It must be obvious that the early progress of a Society, which has for its object —not the establishment of any particular theory, or the development of any single science,—but an enquiry into the various and innumerable relations existing among men and nations, must necessarily be slow. Much consideration is requisite to determine what branches of enquiry may be prosecuted with the

[32] Henry Hallam was a historian and a founding member of the SSL. For Hallam's *ODNB* entry, Lang, Timothy. 2005 'Hallam, Henry (1777–1859), historian.' *Oxford Dictionary of National Biography.* [accessed on 9 Oct. 2018]

[33] John Ramsay McCulloch is a political economist and a follower of David Ricard. For his *ODNB* entry, see Deane, Phyllis. 2004 "McCulloch, John Ramsay (1789–1864), political economist." *Oxford Dictionary of National Biography.* [accessed on 9 Oct. 2018]

[34] See Mary Poovey, *A History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society* (Chicago: University of Chicago Press, 1998). 266, 304–305 and Goldman, 'The Origins of British 'Social Science.'' 611-613. For further discussion, see Chapter Five of this thesis.

[35] Goldman, 'The Origins of British 'Social Science.''

> most advantage; to ascertain what are within the scope and means of the Society; to discover what subjects have already been investigated; and what sources and channels of information are already open, and may be made available to its purposes.[36]

The Council claimed that the SSL was not established to promote a single science nor any particularly theory, which served an implicit criticism of political economy. Instead, the SSL declared that statistics dealt with social relations among men and nations in general.[37] However, such a comprehensive definition of statistics had to include 'innumerable relations' and made the SSL's activities potentially unfocused and impeded its progress.[38] Although the SSL defended its slow progress by insisting that the development of such a comprehensive science had to be slow, it admitted that it was unrealistic to cover every type of human relationship.[39] It posed the issue of how to reconcile statistics' comprehensive scope with the SSL's finite resources. Although the SSL Council felt the need to decide its priority, it was unable to specify the area of focus in this report. It merely stated that the SSL needed to carefully decide the most promising and feasible fields of investigation.[40]

The 1837 Council Report revisited the dilemma between comprehensiveness and feasibility.[41] It was a pressing issue since, as the Council feared, it could lead to the collapse of the SSL altogether.[42] Unlike other branches of science, the Council observed, statistics lacked definite topics of study, which resulted in hindering the progress of statistics.[43] Following the divisions made in the Prospectus, the Council set the basic fields of inquiry: 'economical, political, medical, moral, and intellectual' statistics.[44] However, these fields all together were still too extensive to be covered, and further selection of topics was required, as 'any one of these branches of enquiry, if subdivided, would of itself furnish ample matter for the exertion of a Society'.[45] The Council confessed the SSL was facing a difficult task to 'select subjects of enquiry which come

[36] Statistical Society of London, 'Second Council Report, March 15, 1836 in A1/1 Reports of Council & Lists of Fellows, 1834-1853' 1836, Royal Statistical Society Archive. 5
[37] Ibid.
[38] Ibid.
[39] Ibid.
[40] Ibid.
[41] 'Third Council Report, March 15, 1837 in A1/1 Reports of Council & Lists of Fellows, 1834-1853' 1837, Royal Statistical Society Archive.
[42] Ibid, 5–6.
[43] Ibid, 5.
[44] Ibid, 5. 'Prospectus of the Statistical Society of London.' 492.
[45] '1837 SSL Council Report.'' 5

within their means and powers'.[46]

In addition to extensive areas of investigation, the fellows at the SSL had to focus on the laborious collection of facts and exclude 'all speculative matter from enquiries of the Society'.[47] The Council argued that most of the SSL fellows were, unlike other scientific associations, not men of leisure and the fellows were reluctant to sacrifice their precious free time for the important but not necessarily enjoyable work of fact-gathering.[48] In fact, fellows were apparently not actively involved in statistical observation themselves, as few, the Council observed, were willing 'to devote their time and labour to the procurement and arrangement of the details' while all the fellows were 'willing and desirous to obtain and make use of the results'.[49] While the SSL recognised the usefulness of the laborious collection of facts in broad areas, it realised that such a burden would discourage its fellows' enthusiasm for statistics and threaten the SSL's very existence. The Council argued that the SSL should not exhaust its resources and energies at such an early stage:

> It was their duty as well as their wish to ensure the establishment of the Society on a permanent footing, and rather to provide for its continuance and increasing utility, than to exhaust its means and cripple its energies at the commencement of its existence. The Council deemed it desirable, and in accordance with the wishes of the Fellows, that the Society should be conducted on the same footing as the other scientific Bodies in the metropolis. The Regulations provided that monthly meetings should be held, and the objects of the Society required that the Council should enter into correspondence with other Institutions and individuals; and that they should, periodically, print and publish statistical information. These objects involved the necessity of applying almost the whole of their receipts to the purposes of rent, officers' salaries, printing, and other similar expenses, which, independently of other causes, must of itself prevent the Council from engaging in any extensive enquiries.[50]

The Council argued that the most important duty of the Council was securing permanent footing for the SSL's continuous existence as a scientific society in a metropolis that was supposed to function as a hub of scientific communication. To this end, the Council claimed that regular meetings, the publication of periodicals, and close communication with other institutions and individuals outweighed the collection of new facts. In this report, the Council weighed the relative importance of the statistical community centring around the SSL against the SSL's direct involvement in statistical observation and decided to allocate limited funds for the former. This decision is quite distinct from the

[46] Ibid. 5.
[47] Ibid. 6.
[48] Ibid. 6.
[49] Ibid. 6
[50] Ibid. 6.

simple lack of funding for original surveys.

The collection of new facts remained one of the SSL's objectives, but it was assigned relatively low priority in favour of the maintenance of the statistical community. Accordingly, the SSL encouraged individuals to collect facts as their capacity allowed them and to report them back to the Council for further aggregation. The 1837 Council Report used a metaphor of coinage to illustrate the role of the SSL:

> Each individual might, perhaps, furnish but a small amount of information, but the aggregate would prove of much value; and if the Fellows were to come forward and offer assistance of this nature, the Council would be enabled to suggest its arrangement in such a form as would create uniformity and the greatest amount of utility in the results. As gold is collected in small particles, united with dross, yet when refined and stamped becomes the most valuable medium of commerce; so Statistical facts must be collected in small numbers and in a crude state; and it is not until they have been united in large masses and undergone the process of examination and arrangement that they will be admitted as sterling coin in the currency of science. [51]

The Council likened the role of the SSL to that of a mint in the process of producing coinage. While individuals could collect precious particles of information, they needed a coordinator who would assemble the particles and refine them into aggregated facts. It is worth noting that the Council did not regard the act of aggregation as an automatic process. In fact, the SSL portrayed its role as crucial to the whole process because it was the SSL that would provide 'uniformity' in information separately collected by each individual and that would guarantee the authenticity of aggregated facts. In this scheme, the SSL assumed an indispensable role in the production of authentic statistical facts while transferring the responsibility of actual collection to individuals who would cooperate with the SSL.

This new strategy was further developed in the years following 1840. The 1840 Council Report has drawn historians' attention, as it defines what statistics was in that period.[52] What has eluded previous studies is that the definition of statistics was made to mould the SSL's roles and the limits of the SSL's responsibilities:

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[51] Ibid. 7.

[52] Hilts, 'Aliis Exterendum,' 36. Hilts, *Statist and Statistician*, 157–163. Goldman, 'The Origins of British 'Social Science,' 612-613 Lawrence Goldman, 'Statistics and the Science of Society in Early Victorian Britain; An Intellectual Context for the General Register Office,' *Social History of Medicine* 4:3 (1991), 421. Libby Schweber, *Disciplining Statistics: Demography and Vital Statistics in France and England, 1830-1885*, Politics, History, and Culture (Durham, NC; London: Duke University Press, 2006), 120.

> The first sentence of the prospectus of the Society, issued in 1834, which states that the object of its establishment is 'to procure, arrange, and publish facts calculated to illustrate the condition and prospects of society', contains, perhaps, the best definition of Statistics which has yet been attempted; and, if it be imperfect, its imperfection assuredly consists in its being, not too narrow, but too comprehensive.[53]

The Council Report again highlighted the comprehensiveness of statistics and the need for specialisation in selected fields. As noted above, four fields (economical, political, medical, and moral and intellectual) had already been proposed both in the Prospectus and in the 1837 Council Report. The 1840 Council Report, however, introduced a completely revised categorisation of five fields: the statistics of physical geography, division, and appropriation; of protection; of instruction; of production; and of consumption and enjoyment. Each field was further divided into three subdivisions.[54] Such elaborate divisions meant specifying the fields of investigation and providing an intellectual map for statistical observers to navigate.

As the SSL came to devote its efforts to guiding and coordinating collectors of facts, it became natural to outsource laborious inquiries to other actors. The 1840 Council Report counted on individual statists as well as governmental institutions:

> Although governments have almost exclusively the means of making extensive series of observations in the field of statistics, yet individual exertions, marshalled and directed by voluntary association, can accomplish much; and in the invention and proving of methods of investigation statistical societies will often bring forth plans of which governments may avail themselves with advantage; as, for instance, those on which the investigations of the Manchester and London societies have been conducted into the condition and instruction of the labouring classes. Besides thus pointing out the best modes of investigation, societies, as such, can do little for original observation. They can, in fact, do little more than suggest modes which may be adopted by governments on the one hand and by public spirited individuals on the other. Under the observation of thousands of the latter [public spirited individuals] occur series of facts of the highest interest to the moral sciences, which those who even possess some leisure do not make public, either through ignorance of their value, or through doubt as to finding an available theatre for their exhibition.[55]

The SSL nonchalantly conceded its inferiority in the execution of original surveys in comparison with governmental institutions and voluntary associations. Yet, it did not undermine its own usefulness because statistical societies had different roles to fulfil. The

[53] 'Sixth Annual Report of the Council of the Statistical Society of London,' *Journal of the Statistical Society of London* 3:1 (1840), 1.
[54] Ibid, 4–5.
[55] 'Sixth Annual Report of the Council of the Statistical Society of London,' 8

SSL was capable of marshalling enthusiastic individuals for the collection of facts and proposing improved modes of investigation that would guide governmental and individual efforts to fertile fields.

The SSL also reorganised the committee system in accordance with this clever tactic to relieve the SSL of the burden of the laborious execution of original surveys. The original committee system was set up at its foundation and included four statistical committees based on the divisions in the Prospectus.[56] However, these statistical committees were largely inactive and produced few results. In 1837, the SSL Council introduced a new scheme and allowed any five or more fellows to form a new committee to study subjects of special interest.[57] One of the first committees formed by the new rule was the Education Committee, which conducted the SSL's first original survey. Although the increase in the number of committees and their active exertion may appear to us a success,[58] the 1840 Council Report demanded that the new committees 'be guided, as sections of it [the SSL], by the same principles which animate it [the SSL] as a whole'.[59] It further argued:

> [T]hey [new committees] should confine their first steps to ascertaining the existing state of the several branches of Statistics which they undertake, and subsequently regard themselves rather as a centre for the exertions of their individual members, each in the field to which his peculiar opportunities and tastes may direct him, than as a corporation for the *joint* collection and reduction of new data, in which their operations must be both expensive and inefficient, except in contriving a model of system. [60]

The Council declared that committees should refrain from becoming directly involved in a joint project for the collection of new facts because it was expensive and ineffective. The SSL envisaged that the role of each committee, and the SSL as a whole, was to set up a communal place where willing participants, whether they be government organisations or individual enthusiasts, could come together. The Committees could use 'very small sums in special investigations', but the SSL could also contribute to the collection of new facts, the Council observed, by 'contriving a model of system'.[61] The Council Report declared that the SSL was a scientific body as opposed to a government, whose scope was often limited to immediate practical purposes and whose statistical

[56] Apparently, there was the Colonial Statistical Committee, but it was soon integrated to the Correspondence Committee. Royal Statistical Society, *Annals of the Royal Statistical Society, 1834-1934* (London: Royal Statistical Society, 1934), 31.
[57] '1837 SSL Council Report.' 7–8.
[58] Royal Statistical Society, *Annals*, 37.
[59] '1840 SSL Council Report,' 9.
[60] Ibid, 9.
[61] Ibid, 9.

observations were often conducted 'without a system contemplating the express purposes of the man of science'.[62] Both the SSL committees and the SSL as a whole invested their energy in scientific guidance of surveys than their actual execution. The SSL concluded, 'No scientific Society, in its corporate capacity, can do more.'[63]

A comparison between the SSL and the Central Statistical Commission (CSC) of Belgium makes my point clear.[64] The SSL's 1842 Council Report described the CSC as an institution providing unity and completeness for Belgian information, which appeared to be the role that the SSL aspired to fulfil in Britain.[65] The 1845 Council Report happily reported alleged similarities between the SSL and the CSC.[66]

The SSL successfully found its usefulness in the promotion of statistical science, leaving actual surveys to other actors. In 1840, the SSL decided to reduce its budget for original surveys.[67] Its financial difficulties should have partially accounted for this decision since the SSL itself cited a large debt incurred in 1839 as a reason behind this decision.[68] However, such explanation is insufficient to account for how the SSL could justify their decision to apparently withdraw from the collection of social facts when it was the very objective of the SSL's foundation. I argue that the Council solved an apparent dilemma between the SSL's scientific mission and its limited power by defining the SSL's function as the scientific centre for the collection of statistical facts. In accordance with the SSL's self-definition, the Council suggested that a division of labour among involved parties was necessary to actually cover the numerous objects of statistical investigation. The SSL defined its role to include guiding statistical observers and leaving the actual observations to other actors. This strategy allowed the SSL to distance itself from the execution of original surveys while dedicating itself to the collection of social facts.

3. Trust in Nameless Gatherers

[62] Ibid., 8.
[63] Ibid., 10.
[64] For further discussion on the role of the CSC in early statistics, see Chapter Three of this thesis.
[65] Statistical Society of London, 'Eight Annual Report of the Council of the Statistical Society of London, Session 1841-42,' *Journal of the Statistical Society of London* 5:1 (1842), 89.
[66] 'Eleventh Annual Report of the Statistical Society of London,' *Journal of the Statistical Society of London* 8:2 (1845), 98.
[67] 'Seventh Annual Report of the Council of the Statistical Society of London,' *Journal of the Statistical Society of London* 4:1 (April 1, 1841), 73.
[68] Ibid, 73.

My examination of the SSL's council reports has revealed its efforts to establish the statistical community in which organisations and individuals could work together. This poses the question of how exactly the SSL could help and maintain trust in various actors engaging in statistical observations. To answer this question, this section examines the SSL's development of technologies to generate trust in even nameless agents.

3-1. Schedule and the 'Incompetence' of Individual Fact-Gatherers

In January 1835, the SSL made an extensive list of questions for circulation. Although the project was ultimately a failure, it deserves attention because the project was the first SSL-funded project for the collection of original facts.

At a meeting in January 1835, the SSL Council read a letter from Edward Stanley[69] that proposed 'Heads for the Arrangement of Local Information'.[70] Stanley's list of questions was received favourably in the Council and became known among the SSL fellows as the Paper of Interrogatories project while historians sometimes call it the Great Questionnaire Project.[71] In addition to the questions proposed by Stanley, the Council asked its members to further develop their own questions in their respective fields of interest.[72] Following the discussion, Nassau W. Senior[73] took charge of the 'Condition of the Labouring Classes', Richard Jones[74] of 'Rent', William Whewell[75] of 'Education and Literature', G.

[69] Edward Stanley was probably a bishop of Norwich. For his *ODNB* entry, see Prothero, R. E. 2004 "Stanley, Edward (1779–1849), bishop of Norwich." *Oxford Dictionary of National Biography.* [accessed on 9 Oct. 2018]

[70] 'B2/1 Council Minutes, May 1834–July 1846,' London, Royal Statistical Society Archive, 25 (21 Jan 1835).

[71] Royal Statistical Society, *Annals*, 31–34; Hilts, *Statist and Statistician*, 180–181.

[72] 'B2/1 SSL Council Minutes,' 26-27 (28 Jan 1835).

[73] Nassau William Senior was an influential political economist in his time. For his *ODNB* entry, Deane, Phyllis. 2010 "Senior, Nassau William (1790–1864), political economist." *Oxford Dictionary of National Biography.* [accessed on 9 Oct. 2018]

[74] Richard Jones was a Cambridge-educated political economist. He was a friend of William Whewell, John Herschel, and Charles Babbage. Today, he is considered to be one of the founding fathers of Section F and the SSL. For his involvement in the creation of Section F, see Chapter Two of this thesis. For Jones' *ODBN* entry, see Pullen, J. M. 2008 "Jones, Richard (1790–1855), political economist." *Oxford Dictionary of National Biography*. [accessed on 7 Oct. 2018]

[75] William Whewell was a man of science based in Cambridge. He made contributions to various scientific branches, including the history and philosophy of science. Whewell's invitation to Adolph Quetelet to the third BAAS meeting in Cambridge is discussed in Chapter Two of this thesis. For his *ODNB* entry, see Yeo, Richard. 2009 "Whewell, William (1794–1866), college head and writer on the history and philosophy of science." *Oxford Dictionary of National Biography.* [accessed on 7 Oct. 2018.]

R. Porter[76] of 'Crime & Saving Banks & Agriculture', J. E. Drinkwater[77] of 'Machinery & Manufacture', and Lord Overstone[78] of 'Currency'. William Sykes[79] was assigned to a 'selection from Mr. Stanley's Paper'. [80] Stanley's list was then referred to Nassau W. Senior and Henry Hallam for further consideration.[81] In addition to selected individuals,[82] the Council received assistance from several committees in the SSL, such as the Medical Committee and the Moral and Intellectual Committee.[83]

By March 1836, the Medical Committee had prepared a list of medical questions and sought the Council's permission for printing.[84] In April, the Medical Committee asked the Council about the principle of the 'Interrogatories'[85], which the Council described as follows:

> [T]he Council are desirous not to interfere with the discretion of the Medical Committee; but they are of opinion that it would not be expedient to limit the extent of the Queries in Medical Statistics intended for circulation nor to deviate from the rule of the Society confining its object to facts capable of being numerically stated.[86]

[76] G. R. Porter was the head of the Statistical Department at the Board of Trade. He was a key figure in the Statistical Movement in Britain. He was an active member of the SSL and contributed many papers to the *JSSL*. For his *ODNB* entry, Parris, Henry. 2008 'Porter, George Richardson (1792–1852), civil servant and statistician.' *Oxford Dictionary of National Biography*. [accessed on 9 Oct. 2018]

[77] J. E. Drinkwater was an administrator in India. He was a founding member of the SSL and its first honorary secretary (1835-1836). For his *ODNB* entry, Prior, Katherine. 2004 'Bethune, John Elliot Drinkwater (1801–1851), administrator in India and educationist.' *Oxford Dictionary of National Biography.* [accessed on 9 Oct. 2018]

[78] S. Jones Loyd, more commonly known as Lord Overstone, was a banker. He was President of the SSL in 1851–1853. Mouat claims that Overstone left the SSL after having dispute with William Newmarch and William Guy over the removal of the SSL's Latin motto. However, Annals points out that Overstone was the member of the SSL when he died in 1883. See, Frederic J. Mouat, 'History of the Statistical Society of London,' *Journal of the Statistical Society of London*, June 22, 1885, 19. and Royal Statistical Society, *Annals*. 82–83. For his *ODNB* entry, Reed, Michael. 2008 'Loyd, Samuel Jones, Baron Overstone (1796–1883), banker.' *Oxford Dictionary of National Biography.* [accessed on 9 Oct. 2018]

[79] William Sykes was an army officer in India. He was an active member of the SSL and contributed to the *JSSL*. For his *ODNB* entry, see Woodward, B. B. 2004 'Sykes, William Henry (1790–1872), army officer in the East India Company and naturalist.' *Oxford Dictionary of National Biography.* [accessed on 9 Oct. 2018]

[80] 'B2/1 SSL Council Minutes,' 26-27 (28 Jan 1835).

[81] 'B2/1 SSL Council Minutes,' 26–27 (28 Jan 1835).

[82] Ibid, 27 (28 Jan 1835).

[83] 'B5 Medical Committee Minutes,' London, Royal Statistical Society Archive, 4–6 (4 Feb 1835) and 'B6 Miscellaneous Committee Minutes,' London, Royal Statistical Society Archive, 5 (5 May 1835: Moral and Intellectual Committee)

[84] 'B5 Medical Committee Minutes,' 29 (30 Mar 1835).

[85] Ibid, 30 (13 Apr 1835).

[86] 'B2/1 SSL Council Minutes,' 90–91 (15 April 1836). The Council's answer was read at the Medical Committee. See, 'B5 Medical Committee Minutes,' 31 (20 April 1836).

The Council granted the Medical Committee the liberty to form questions that best fit the Medical Committee's interest within the SSL's rule. This rule referred to here was most likely the one that promised to exclude all 'opinions' from the SSL publications and that confined the attention of the SSL to 'facts' that 'can be stated numerically and arranged in tables' as much as possible.[87] Using this rule, the Council could mould the shape of possible questions by forcing them to be able to be stated numerically. The Council rephrased the rule in May 1836 when it resolved that 'the Council confine themselves strictly to statistical questions'.[88]

In June 1836, the Council finalised the list of questions and printed 2,000 copies.[89] The list was circulated under the title *First Series of Questions Circulated by the Statistical Society of London*.[90] Some of these copies were circulated among the SSL members, and a hundred were sent to Section F of the Bristol meeting of the BAAS. The Council sought assistance for further circulation from the Factory Commissioners and the Assistant Poor Law Commissioners.[91] Despite the large number of copies circulated, the replies were very few.[92]

It is worth asking why the Council specifically adopted the circulation of a printed list of questions as mean of the fact-gathering. Since the MSS conducted an investigation of the state of education by house-to-house visits during the same period, the SSL could have taken the same type of investigation to collect new facts.[93] The SSL explained the rationale of the use of the circular in the 1835 Council Report:

> In the prospectus which was issued immediately upon the formation of the Society, the circulation of an extensive list of queries was pointed out as one of the most effectual means of accumulating statistical information. This important requisite has not been neglected, but the preparation of such a list demands considerable time, and it is desirable that none should be issued with the sanction of the Society which has not received very mature consideration.[94]

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87 'Prospectus of the Statistical Society of London,' 492.

88 'B2/1 SSL Council Minutes,' (6 May 1836). This resolution is also mentioned in its official history. See, Royal Statistical Society, *Annals*, 32–33.

89 'B2/1 SSL Council Minutes,' 101–102 (10 June 1836).

90 Statistical Society of London, *First Series of Questions Circulated by the Statistical Society of London* (London: William Clowes & Sons, 1836).

91 'B2/1 SSL Council Minutes,' 106 (1 July 1836).

92 Royal Statistical Society, *Annals*, 34. The Annals claims that the replies were 'ordered to be read on 31 May 1838', which I could not find in the Council Minutes.

93 Thomas Southcliffe Ashton, *Economic and Social Investigations in Manchester, 1833-1933 : A Centenary History of the Manchester Statistical Society*, re (Hassocks: Harvester Press, 1977), 27.

94 'First Council Report, March 16, 1835 in A1/1 Reports of Council & Lists of Fellows, 1834-1853' 1835, Royal Statistical Society Archive, 33.

The Council justified the Paper of Interrogatories project by claiming it was the realisation of a promise made in the SSL's Prospectus. The SSL maintained that circulars should be preferred over other means available for the collection of statistical facts because of its effectiveness. Interestingly, the Council conducted a pilot project to test this point.[95] In December 1834, the Council requested that G. R. Porter develop a circular form on saving banks by consulting a previous paper given in an ordinary meeting of the SSL.[96] Five hundred copies of Porter's list were printed in January 1835.[97] Apparently, the SSL was satisfied with the result, as the SSL advanced the Paper of Interrogatories project.

It is important to note that the SSL saw that designing a circular requires time and intellectual abilities.[98] As the above excerpt shows, the Council claimed the responsibility for such an important task and insisted that no list should be circulated without the Council's 'very mature consideration'.[99] This is the key to answering why the circular was considered particularly effective in the collection of facts. To clarify this point, it is beneficial to go back to the original Prospectus to which the Council Report was referring. The Prospectus claimed:

> Towards collecting fresh statistical information, the first step in order, both of time and importance, would be the arrangement of a good set of interrogatories, to be drawn up under the superintendence of the Sub-committees, and afterwards examined, sanctioned, and circulated by the Council. The careful execution of this task is essential both to afford guidance and aid to individual inquirers, and to protect the Society against the influx of imperfect or irrelevant statements. Willing agents of inquiry exist in abundance quite ready to aid in collecting materials; but few of these agents take a very wide view of all the objects of statistical inquiry, and indeed few have very distinct notions about the precise information the Society may wish to collect, even as to any one object.[100]

The Prospectus promoted the use of a circular form that was drawn up by SSL committees specialising in each field of investigation and approved by the Council for two reasons.

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[95] Ibid. 33

[96] The paper was given on 17 November 1834. See, William Lee and G. R. Porter, 'Analysis of the Accounts and Depositors of the Devon and Exeter Savings' Bank,' *Proceedings of the Statistical Society of London* 1:1 (November 17, 1834), 8*-8*.

[97] 'B2/1 SSL Council Minutes,' 20-21 (10 Dec 1834, 14 Jan 1835). Whether the Porter's list preceded the project of Interrogatories was unknown. Although Stanley's proposal for the project was submitted on 21 January 1835, the Council minute referred it as a 'revised Edition', indicating the original version submitted at an earlier date. However, no entry was found in the Council minute to refer to the original version. See also, 'B2/1 SSL Council Minutes,' 25 (21 Jan 1835).

[98] '1835 SSL Council Report,' 33.

[99] Ibid, 33.

[100] 'Prospectus of the Statistical Society of London,' 493–494.

The first benefit was to afford guidance and aid to individual inquirers. As I have previously discussed, the SSL defined statistics as a comprehensive social science. The comprehensiveness was a vital point for statistics to claim the 'crown' of the social sciences, but in exchange, statistics had to sacrifice a clear framework for its research topics. The printed list of questions was supposed to make visible the comprehensive picture of statistics. The second benefit was to protect the SSL against the influx of 'imperfect' or 'irrelevant' information. The SSL assumed that a large number of statistical inquirers were willing to assist the SSL's statistical observation. However, it posed the issue of the 'incompetence' of those agents. As the Prospectus observed, they supposedly lacked an understanding of what kind of information should be collected and would be lost in the vast field of statistical inquiry. A large number of disoriented and yet enthusiastic agents could flood the SSL with 'imperfect' or 'irrelevant' information and inadvertently destroy the SSL altogether. The issue of incompetent agents threatened the SSL and the foundation of the statistical community. The preformed list of questions was a device that turned disoriented agents into competent fact-gatherers.

It is vital not to confuse the incompetence about which the SSL worried in the Prospectus with other types of incompetence on the side of the agents, such as the lack of perceptual abilities. An example from a later period illustrates the difference between two types of incompetence. In 1877, William Farr[101] was frustrated with coroners' incompetence regarding the determination of the causes of death. Coroners, Farr criticised, knew 'little or nothing of the different species of causes of disease' and were incapable of discerning different causes.[102] The Prospectus worried about nothing of this sort. It apparently was not even bothered by agents' implicit bias when making observations. It assumed that individual gatherers could make sound observations and collect materials as long as they were assisted with a list of questions formed by SSL specialist committees and authorised by the SSL Council. Unlike Farr, the Prospectus did not expect any special observational skills on the side of agents.

The absence of expectation for specialist skills and knowledge allowed the SSL to mobilise a large number of untrained agents without causing any issue regarding the quality of data. The 1837 Council Report showed this point when it answered concerns regarding the lack of abilities among inquirers participating in the Paper of Interrogatories

[101] For Farr's biography, see Introduction footnote 2.
[102] William Farr, 'Letter to the Registrar General on the Causes of Death in England,' in *Thirty-Eighth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England* (London: Her Majesty's Stationery Office, 1877), 225.

project:

> The Council prepared and printed last year a set of queries for the collection of Parochial Statistics, copies of which were transmitted to all the Fellows, by means of which it hopes to collect some useful local information. It has been objected that these queries are too comprehensive and numerous, and that no individual would be able to furnish answers to them all; but this was foreseen by the Council, and the queries were therefore so printed, that they might be separated, and the several papers relating to different branches of the subject be distributed to the persons best qualified to return answers to each. The Council has already received replies from one parish, furnished by a gentleman and his steward, and has received notice of others being in a forward state of preparation.[103]

The Council received a critical comment on the feasibility of the Paper of Interrogatories project. Numerous questions in the list prompted some SSL members to wonder whether it was possible for a single individual to furnish answers. The Council solved this problem simply by printing the list of questions on separate sheets so that the task could be easily divided by different agents. The assumption that each parish would have enough inquirers to carry out this task suggests that the Council did not expect the inquirers to be specifically trained for the task. Although the Council claimed that copies should have been distributed to 'the persons best qualified', this cannot be construed as an exclusive statement since the Council happily received replies furnished by not only a gentleman but also his 'steward'. The divisibility of the list presupposed that the execution of fact-gathering was not an intellectually demanding task, provided the list was drawn up by the SSL as a scientific body.

The trust in untrained agents corresponded to the SSL's self-understanding expressed in the same 1837 Council Report that compared the SSL to a mint in the scientific world, which I discussed earlier. The SSL's scheme divided the design and execution of the data collection; each individual could participate in the joint project of fact-gathering and bring a small amount of information while the SSL, as the central scientific body, coordinated local agents, assembled small particles of information, and produced statistical facts with unity. The SSL produces statistical facts that would be accepted universally as the currency of science in the same way as genuine sterling coin in the market.

A list of questions, or a schedule, in the Paper of Interrogatories project should be seen as a scientific device that generated trust in unremarkable agents and laid a fundamental

[103] '1837 SSL Council Report,' 10.

basis for the statistical community in which the SSL would marshal numerous observers.

The potential issue about the use of ordinary agents defined their lack of understanding of proper subjects of statistical investigation, and the SSL maintained that this issue could be solved by the provision of a schedule devised by the SSL. The marshalling of numerous agents helped relieve the SSL's burden in the laborious work of the collection of facts. This scheme assumed that ordinary agents have sufficient perceptual powers to conduct their tasks. While this assumption may seem naïve to us, I argue that the SSL had a reasonable basis for it. The examination of the fact-gathering activities that followed the Paper of Interrogatories demonstrates this point.

3-2. Nameless Agents and the Authorship of Statistical Facts

While the SSL became heavily dependent on official statistics, it adopted apparently innovative methods in its early days, such as the visiting method.[104] Abrams regretted the SSL's discontinuation of the visiting method into the state of the poor since early statistics could have developed full-fledged sociology that has both qualitative and quantitative methods of social investigation.[105] Although Abrams attributed the SSL's decision to Victorian statisticians' uncritical acceptance of government surveys, it apparently contradicts the fact that the SSL's Education Committee began as a criticism of governmental surveys on education among the poor. It poses the question of why the SSL so easily abandoned the apparently innovative use of visiting for social research.

After the failure of the Paper of Interrogatories project, original surveys were conducted by the SSL's individual committees rather than the SSL Council. In 1837, the SSL Council created a new rule about the formation of a committee that allowed any five or more fellows to form a new committee that was fitting for their special interest.[106] What is striking among those committees' activities was the variety in modes of investigation that those newly formed committees adopted. Among these committees, the Education Committee deserves special attention for its use of visiting as a means of data collection.

The Education Committee was formed in July 1837. The members included Mr. Duppa. who was likely B. F. Duppa, the editor of the publications of the Central Society of

[104] Abrams, *Origins of British Sociology*, 20 Desrosières, *The Politics of Large Numbers*, 175.
[105] Abrams, *Origins of British Sociology*, 20
[106] '1837 Council Report' A1/1 Reports of Council & Lists of Fellows, 1834–1853, 7–8. 'B2/1 SSL Council Minutes,' 129–131 (17 Feb 1837).

Education.[107] The Education Committee authorised thorough investigations in which a paid agent walked every street in designated parishes and visited all of the schools within the area. Edgell,[108] another committee member, simultaneously investigated the state of the poor by travelling house to house. He published his report as a supplement to the Education Committee reports.[109]

The basic features of the Education Committee surveys were similar to those of the MSS. In fact, G. R. Porter, a member of the Education Committee,[110] later recalled that the Education Committee was influenced by the MSS's pioneering works, which questioned the recently collected educational statistics by the government.[111] In 1833, the Earl of Kerry[112] proposed an investigation into the state of education by the House of Commons in response to the significant attention paid to education at the time.[113] John Rickman,[114] who was responsible for taking the census, was ordered to organise a large-scale educational survey in England and Wales. In April 1834, the MSS set up a committee to investigate 'the state of public and private education in Manchester' and conducted a small-scale survey to check the accuracy of the governmental survey promoted by Lord Kerry. The MSS found the results unsatisfactory and spearheaded the criticisms against the government findings. In its critical report published in 1835, the MSS pointed out

[107] For Duppa's *ODNB* entry, Curthoys, M. C. 2004 "Duppa, Baldwin Francis (1801–1840), educationist." *Oxford Dictionary of National Biography.* [accessed on 9 Oct. 2018]. The Central Society of Education was formed in 1836. Apparently, there was an overlap between the members of Central Society of Education and the that of the Education Committee in the SSL. Interestingly, upon the resignation of the agent, Mr. Caldwell, the Education Committee appointed a former agent, Mr Higgins, of the Central Society of Education as a temporary substitute. 'B7 Committee of Inquiry into the State of Education Minutes,' London, Royal Statistical Society Archive, (27 Mar. 1837). For the Central Society of Education, also see R. W. Rawson, '[From Documents Collected by a Committee, Formed from the Central Education Society, for the Purpose of Enquiring into the State of the Poor in the Parish of St. Mary-Le-Bone],' *Proceedings of the Statistical Society of London* 1:10 (May 15, 1837): 286–94.

[108] Edgell Wyatt Edgell was apparently an active member of the Education Committee. He published five papers in the *JSSL* starting from 1838 until 1851. but little is known about his life. There is no *ODNB* entry for him.

[109] Edgell Wyatt Edgell, 'Moral Statistics of the Parishes of St. James, St. George, and St. Anne Soho, in the City of Westminster. Supplementary to the Third Report of the Education Committee of the Statistical Society of London,' *Journal of the Statistical Society of London* 1:8 (1838): 478–92.

[110] He was also a member of the Central Society of Education.

[111] George Richardson Porter, *The Progress of the Nation*, vol. 3 (London: Charles Knight & Co., 1843), 271–272.

[112] William Petty-FitzMaurice, Earl of Kerry has no entry in *ODNB*, but he was apparently a Whig politician and a son of Henry Petty-Fitzmaurice, 3rd Marquess of Lansdowne, the first President of the SSL.

[113] For the following description of the event, see Ashton, *Economic and Social Investigations in Manchester*, 26–33. Also, see Hilts, *Statist and Statistician*, 182–186.

[114] John Rickman was a civil servant who carried out the first four British census in 1801–1831. He was also expected to take the 1841 census, but passed away in 1840. The GRO took over his position as a census taker. For his *ODNB* entry, Eastwood, David. 2004 "Rickman, John (1771–1840), statistician and civil servant." *Oxford Dictionary of National Biography*. [accessed on 9 Oct. 2018]

serious deficiencies within this survey. The Select Committee on the Education of the Poorer Classes (SCEPC), which was in charge of the survey, took the MSS report seriously and even included it in the appendix of its report.[115] The MSS then extended surveys to other areas and published reports, such as Bury in 1835, Salford in 1836, and Liverpool in 1836–1837. In 1838, the MSS investigated the state of education in the town of Pendleton, where the MSS used the house-to-house visitation approach, of which the MSS was the pioneer in British history.[116]

The MSS identified a few major deficiencies of the parliamentary survey of 1833, including that the final returns omitted many schools that governmental agents failed to locate. The survey also double counted students who were attending both weekday and Sunday schools. Interestingly, however, the MSS's reports did not question the competence of the government as an actor to collect statistical facts. The criticism concerned, instead, the accuracy of the returns because of ill planning. The SSL's inquiries that followed the MSS's criticism of the counterinvestigation also sought to supplement the government rather than to completely replace it. This directs us to return to the question of the quality of the agents.

The SSL's Education Committee appointed John Caldwell as the agent to execute the actual visits for the first surveys. No information is available about Caldwell's life and achievements. His name rarely appears in the reports of the Education Committee, and his existence was almost invisible from the SSL's publications. While Caldwell appears to be an obscure figure, the Education Committee was apparently pleased with his service. When Caldwell resigned in 1838 from his position as the SSL's survey agent, the Committee passed a resolution to thank him for his service. It reads:

> Resolved that Committee do express to Mr Caldwell its late agent; to perfect satisfaction at the zeal & industry with which he has carried on the enquiries entrusted to him by this Committee, and the high opinion entertained by the Members of this Committee of his intelligence & ability.[117]

The Committee was apparently satisfied with his diligence and reasonable intelligence, but the testimonial did not mention any specialist knowledge in either statistical inquiry

[115] 'Report from the Select Committee on Education in England and Wales Together with the Minutes of Evidence, Appendix, and Index,' 1835, UK House of Commons Papers (465).
[116] Ashton claims that the MSS used this method for the first time during 1834–1836 in a survey that studied the state of the working classes. Ashton, *Economic and Social Investigations in Manchester*, 21.
[117] 'B7 Committee of Inquiry Minutes,' 15 (27 Mar. 1838).

or education, suggesting that he had none. His low salary further corroborates this assessment. The Education Committee paid Caldwell 30.s per week for his survey, which means his annual salary would have been less than £80.[118] It was perhaps a decent salary for an ordinary clerk but nothing comparable with Farr's 'modest' £350 salary as the compiler of statistics at the GRO.[119] As I will discuss in Chapter Three, in 1835, McCulloch proposed creating a statistical office that had a highly intelligent local agent in every major city whose annual salary, McCulloch insisted, should not be less than £650.[120] Those evidences suggest that the SSL saw Caldwell as an unremarkable agent.

Although there are very little historical materials about Caldwell's role in statistics, his rare appearance in public can be found in the SCEPC reports, as the SCEPC summoned agents from the MSS and SSL as witnesses. On 1 March 1838, Caldwell was called before the SCEPC to give testimony on his experience as an SSL agent. When asked about a detailed description of the national and parochial schools included in the Education Committee report, Caldwell confirmed its correctness and further offered his observation of a 'strong moral and religious feeling' in those schools.[121] Regarding this point, he and William Gladstone[122] had the following exchange:

> [William Gladstone:] Have you embodied any statement to that effect [strong moral and religious feeling in the national and parochial schools] in the Report? [John Caldwell:] I do not think I did. When I commenced this inquiry, I had not, of course, much experience in the inquiry, and consequently I strictly adhered to the printed questions that were proposed to me; but after a little experience, and finding a good feeling to exist upon the part of the Statistical Board, that they would allow observations to be made, I did make observations from time to time, and that encouraged me to offer several suggestions of myself, in consequence of which the heads of my inquiry have been a little increased in number.[123]

Caldwell casually admitted his lack of previous experience in social survey and claimed that he just followed the list of questions provided to him by the SSL. The thought apparently did not occur to him that such an admission would discredit the SSL's reports.

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[118] Ibid, (17 October 1838)

[119] William Farr, *Vital Statistics: A Memorial Volume of Selections from the Reports and Writings of William Farr*, ed. Noel A. Humphreys (London: Sanitary Institute of Great Britain, 1885), xii.

[120] John Ramsay McCulloch, 'State and Defects of British Statistics,' *Edinburgh Review* 61 (1835), 177–179.

[121] 'Report from the Select Committee on Education of the Poorer Classes in England and Wales; Together with the Minutes of Evidence, and Index,' 1838, UK House of Commons Papers (589), 27 (q. 210).

[122] William Gladstone was an author and the British prime minister. He was elected for parliament first time in 1832. Matthew, H. C. G. 2011 'Gladstone, William Ewart (1809–1898), prime minister and author.' *Oxford Dictionary of National Biography*. [accessed on 9 Oct. 2018]

[123] 'Select Committee Report on Education, 1838 [589],' 28 (q. 212). [] is inserted.

This suggests that Caldwell believed that his inexperience was compensated by the SSL's guidance in the form of printed questions. This impression was affirmed by his other testimony. When he was asked whether the number of children in education was greater than his expectation, he answered with the following:

> I must confess, that having entered into the thing at first rather in a mechanical kind of way, I paid very little attention but to the questions placed before me, (viz. on printed slips, put into my hands by the secretary) and I paid no respect whatever to the amount of population; I left that to the Statistical Board.[124]

He apparently believed that this job could be done in a 'mechanical' way, as he understood that his job was to furnish answers to the questions that the SSL considered important. This suggests that there was very little room for him to play an active role in observation.

In this respect, the role of Caldwell's observation is an interesting topic. As he gained more experience, Caldwell claimed, he made observations and suggestions, which resulted in increasing the number of 'the heads of my inquiry'. In other words, his observation helped the SSL improve the structure of the list of questions. The type of observations Caldwell offered should not be confused with detailed descriptions of the poor, such as Henry Mayhew provided in Victorian Britain.[125]

3-3. Division of Labour and Varying Degrees of Competence

I have discussed that, in the SSL's scheme for the collection of facts, nameless agents could turn into competent enumerators once they were given a carefully designed schedule. The low expectation regarding enumerators' abilities meant that anyone could replace such agents and that discriminating observations were not expected. This suggests that using a preformed list of questions, rather than employing a paid agent, was considered more important for the production of statistical facts.

This explains why the SSL committees employed apparently various types of investigations. As long as there was a form to fill in, there was no need to employ costly agents. In addition to the Education Committee, the SSL appointed several committees, including the Census Committee, the Registration Committee,[126] the Crime Committee,

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[124] Ibid, 28 (q. 216).

[125] Eileen Yeo, 'Mayhew as a Social Investigator,' in *The Unknown Mayhew; Selections from the Morning Chronicle, 1849-1850*, ed. E. P. Thompson and Eileen Yeo (London: Merlin Press, 1971), 51–95.

[126] The Committee was appointed in December 1840 to consider the registration of births, deaths, and

the Hospital Statistics Committee (HSC), and the Vital Statistics Committee (also known as the Statistics of Life Committee). The Strike Committee used circulars while the Vital Statistics Committee and Crime Statistics Committee created new forms for registering medical cases and criminals, respectively.[127] As Kent points out, we can analytically distinguish statistical data collected through surveys from that generated from records of, for example, birth, marriage, and death. Interestingly, however, the SSL did not appear to be very attentive to differences in the modes of inquiries of those committees. This suggests that the SSL might not have made the distinction Kent makes. What the SSL committees appeared to have in common was the use of a preformed list of questions. As I have previously discussed, the structured list of questions was conceived as a form of guidance for agents, who had a limited understanding of what questions needed to be asked. This view partially explains why the visiting approach was so easily abandoned. As long as an improved list of questions was devised, the SSL had no issue with leaving the data collection to someone else, such as the government agents.[128]

An examination of the Hospital Committee proves this point. While the Hospital Committee's use of a new form for medical registration appears very different from the visiting survey, it used a very similar machinery to the one the Census Committee proposed adopting in the 1841 Census. What united both committees were the use of prepared questions and the introduction of a hierarchical division of labour.

From 1834 to 1844, three different committees were operating in the SSL for the collection of medical and vital statistics: the Medical Committee, the Vital Statistics Committee, and the HSC. The relationship among the three committees was sometimes unclear, and it was possible that even the Council and SSL members did not clearly distinguish them. A rough outline of these committees is as follows. The Medical Committee was formed upon the establishment of the SSL in 1834 and read a report at the 1837 SSL ordinary meeting on the number of suicides in Westminster.[129] According to the committee minutes, the last meeting of the Medical Committee took place in January 1839. The Vital Statistics Committee, also known as the Statistics of Life Committee, was formed in January 1838 as one of the first committees under a new

marriages in Scotland and Ireland.

[127] 'Fourth Annual Report of the Council of the Statistical Society of London,' *Journal of the Statistical Society of London* 1:1 (1838): 5–13.

[128] Even the Education Committee sometimes used posting method, rather than visiting. They sent circulars German schools in England and ask them to fill in. 'B7 Committee of Inquiry Minutes,' [9] (23 Oct. 1837).

[129] 'Report of the Committee on Medical Statistics,' *Proceedings of the Statistical Society of London* 1:10 (1837): 268–69.

committee formation rule introduced in 1837.[130] The Vital Statistics Committee published a report in 1839 on the sickness and mortality among the metropolitan police force and two reports in 1840 and 1841 respectively on the sickness and mortality among British troops stationed in the Madras Presidency.[131] According to the minutes, the Vital Statistics Committee last met on 14 May 1841. The HSC was established in December 1841.[132] Interestingly, the activities of the HSC were recorded in the same minutes as those for the Medical Committee, suggesting some continuity between the two committees. According to the committee minutes, the HSC's last meeting was held on 10 May 1844.[133]

The HSC met for the first time on 10 December 1841. William A. Guy,[134] professor of forensic medicine at King's College and a dedicated member of the SSL, was in chair. William Farr proposed the periodical enumeration of all the patients in London hospitals.[135] Farr's plan was that the enumeration would be carried out every three months from 31 December 1841 to 30 September 1842 and would collect the information regarding patients' sex, marital status, occupation, age, name of disease, the number of days since the attack, and the number of days since admission into hospital.[136] The actual enumeration took place only twice—in January 1842 and January 1843.[137] Farr drew up tables from these returns and published two reports—in 1842 and 1844, respectively.[138] During the first meeting of the HSC, Farr also laid out a division of labour among those who would be engaging in fact-gathering. Three different actors were distinguished with varying degrees of responsibility and intellectual abilities: enumerators, medical officers

130 '1838 Council Report,' 6.

131 'Report of a Committee of the Statistical Society of London, Appointed to Collect and Enquire into Vital Statistics, upon the Sickness and Mortality among the Metropolitan Police Force.-May, 1839,' *Journal of the Statistical Society of London* 2:4 (1839): 193–97; 'Report of a Committee of the Statistical Society of London, Appointed to Collect and Enquire into Vital Statistics, Upon the Sickness and Mortality Among the European and Native Troops Serving in the Madras Presidency, from the Year 1793 to 1838,' *Journal of the Statistical Society of London* 3:2 (1840): 113–43; 'Second Report of a Committee of the Statistical Society of London, Appointed to Collect and Enquire into Vital Statistics, Upon the Sickness and Mortality Among the European and Native Troops Serving in the Madras Presidency,' *Journal of the Statistical Society of London* 4:2 (1841): 137–55.

132 The reports of the Hospital Statistics Committee claimed its establishment on December 1840. 'Report of the Committee on Hospital Statistics,' *Journal of the Statistical Society of London* 5:2 (1842), 168. and 'Second Report of the Committee of the Statistical Society of London on Hospital Statistics,' *Journal of the Statistical Society of London* 7:3 (1844), 214. However, the minutes of the Hospital Statistical Committee shows its first meeting was held in December 1841.

133 'B5 Medical Committee Minutes,' (10 May 1844).

134 For Guy's biography, see Introduction footnote 62.

135 'B5 Medical Committee Minutes,' [47-48] (10 Dec 1841).

136 Ibid, [47-48] (10 Dec 1841).

137 'Hospital Statistics Committee Report,' 169 and 'Hospital Statistics Committee Second Report,' 214.

138 'Hospital Statistics Committee Report'; 'Hospital Statistics Committee Second Report.' For Farr's involvement in the 1842 report and in the 1844 report, see respectively see 'B5 Medical Committee Minutes,' [56, 60, 66–67] (20 Jan 1842, 25 May 1842, 22 June 1842, 2 Apr 1844, 10 May 1844).

in respective hospitals, and the HSC at the SSL. The HSC was to provide a schedule for enumerators, who, in return, would send back the collected facts to the SSL. From the returns, the HSC would compile abstracts.[139] Medical officers in respective hospitals were to act as intermediaries between enumerators and the HSC. They would be requested to appoint suitable persons to be enumerators and to attend the committee meeting.[140]

The HSC adopted Farr's system of division of labour and wrote letters asking medical officers in hospitals to nominate 'pupils or other competent persons' to be enumerators and attend the committee meetings to 'consider some plan for registering & abstracting the facts in Hospitals'.[141] When Farr drew up the draft of the first report, medical officers were again invited to examine the manuscript. Five of them actually attended the meeting.[142] The roles of the HSC in this division of labour may appear to be purely administrative: requesting the cooperation of medical officers in hospitals, providing the schedule to enumerators, and receiving returns. However, further examination shows that the HSC played a vital role in the collection of medical statistics by providing scientific supervision.

As the 1843 SSL Council Report observes, the HSC was set up for two principal objectives other than the patient census: one was the 'contrivance of a mode of registering the cases in hospitals', and the other was to 'procure the adoption' of such registration in medical institutions throughout the kingdom.[143] The realisation of these objectives was key in the production of statistical facts, as it would make the uniform recording of the important features of cases possible. In the SSL, the idea of a standardised registration of medical information can be traced back to as early as 1837, when the Medical Committee contemplated making new forms for the registration of information that would provide 'uniformity' to medical statistics.[144] Upon the formation of the Vital Statistics Committee in 1838, the Council claimed one of its purposes was 'to suggest improved forms and methods of gathering Statistics of Life'.[145] However, it is unclear what 'forms' exactly refers to in these cases. It was the HSC that developed the idea further. From the beginning,

139 'B5 Medical Committee Minutes,' [48] (10 Dec 1841).
140 Ibid, [48–49] (10 Dec 1841).
141 Ibid, [51–53] (15 Dec 1841).
142 Ibid, [57-59] (1 June 1842, 15 June 1842).
143 'Ninth Annual Report of the Council of the Statistical Society of London. Session, 1842–3,' *Journal of the Statistical Society of London* 6:2 (1843), 90.
144 'Medical Statistics Committee Report.' 268.
145 '[Announcement for the Establishment of Other Statistical Societies and the Formation of a New Committee in the Statistical Society of London],' *Proceedings of the Statistical Society of London* 2:14 (1838), 30.

the HSC was interested in the improvement of case registration in hospitals as well as making a schedule for the enumeration of patients. In its first meeting on December 1841, the HSC proposed obtaining accounts for the state of medical records kept in London hospitals.[146] In June 1842, the HSC requested that the respective Board of London hospitals adopt uniform methods for the registration of cases and argued that the periodic returns should be made in the forms provided by the Committee.[147] In July 1842, the HSC published the first report, which included two types of forms: one for the enumeration reporting the state of patients on a particular day and the other for the registration recording medical cases from patients' admission to discharge, whether by cure or death. The record of cases would include information under the headings of 'disease', 'occupation', 'sex', 'age', 'number of days in hospital', 'duration of case in days', 'date of attack', 'date of admission', 'when discharged', and 'important symptoms, complications, or post mortem appearances.'[148] The report provides an example of a form and the brief instructions of how to fill it in.

The first report of the HSC strongly advocated for the uniform registration system of cases for the progress of medical science, as the accumulated records would make it possible to compare the efficacy of different treatments. Cases aggregated in a large number would eliminate 'accidental irregularities' under a particular treatment and 'the average rate of mortality and recovery in each disease, at each age, and at each stage of disease, [would] be determined.'[149] Such comparisons would presuppose uniformity among collected facts:

> Should they [the London hospitals] act in an isolated manner, and independently of each other, or should they register the observations on a uniform system, and throw them into a common stock, to be arranged in the order which may appear, on due consideration, best calculated to yield the important results to which we have above adverted? The advantages of the latter proceeding, in a statistical point of view, are so obvious…[150]

It should be noted that the HSC envisioned the collaboration among hospitals to create a 'common stock', as opposed to the accumulation of medical records in isolation. To this end, the use of a standardised registration form was essential. The HSC's role was to provide such a form in collaboration with hospitals. The HSC invited the medical officers

146 'B5 Medical Committee Minutes,' [49] (10 Dec 1841).
147 Ibid, [59] (15 June 1842).
148 'Hospital Statistics Committee Report,' 174.
149 Ibid, 173.
150 Ibid, 173. [] inserted.

for a committee meeting to discuss this scheme.[151] Hospitals were requested to keep the register of cases in a form supplied by the SSL and then provide quarterly returns to the SSL.[152] The first annual abstract was to be made under the direction of 'a joint committee, named by the Council of the Statistical Society, the Boards and the medical officers of the hospital'.[153] In September 1842, the HSC wrote a letter to governors and directors of hospitals with proposed forms of medical registry enclosed.[154]

To have a better grasp of the role of a standardised form, it would be beneficial to refer to the report of the SSL's Census Committee (CC) published in 1840 proposing the improved machinery for the 1841 British census.[155] In the report, the CC drew attention to the limited capacity of enumerators and the want of a system in previous British censuses to ensure the uniformity in collected facts:

> For the actual enumeration of the living, it will be perceived that no method or system was in the first instance, nor has it ever since been, prescribed; the schedules transmitted to the overseers and schoolmasters being merely the forms in which they were to express the *results* of the enumeration, which, in each parish, they might make in whatever method they should think best. When the very various intelligence and character of the agents, the absence of all central control over their proceedings, and the opening for negligence which the whole system, or rather want of system, presents, are taken into consideration, it can scarcely be imagined that any very great exactitude has been obtained in the enumerations that have yet been made.[156]

Although the schedule was an important device to collect facts, the SSL apparently considered that it would not automatically ensure the uniformity in collected facts because enumerators' idiosyncrasies could end up producing incommensurable facts. To combat this evil, the central control over the process of enumeration was required through specific instructions for filling in the schedule and for the local supervision of enumerators. The CC suggested enlisting the help of the Boards of Guardians and 'men of scientific acquirements and public spirit' in their respective districts for such supervision.[157]

The CC further made an important observation. Allowing for the limited intellectual

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151 Ibid, 173.
152 Ibid, 174.
153 Ibid, 174.
154 'B5 Medical Committee Minutes,' [62] (7 Sep 1842).
155 'Report to the Council of the Statistical Society of London, from the Committee Appointed to Consider the Best Mode of Taking the Census of the United Kingdom in 1841,' *Journal of the Statistical Society of London* 3:1 (1840): 72–102.
156 Ibid, 86.
157 Ibid, 95.

abilities of enumerators, the CC pointed out the need for a simple schedule. The CC drew a line between the act of enumeration and abstraction for this purpose:[158]

> Not less important are the *occupations* of a people, or, in other words, the sources from which they draw their subsistence. These are very difficult of classification, but very easy of statement in each individual case; […] The error of previous attempts of this kind has consisted in requiring of every enumerator to go through a laborious classification, which he was incompetent to accomplish fully, had he even been properly instructed, and presented with a good model.[159]

The CC's distinction makes an interesting contrast with the use of occupational classification at the local level, for example, the 1831 England and Wales Census asked enumerators to use seven occupational categories.[160] The CC claimed that, even with proper instruction, it would be impossible to assume that enumerators would be able to correctly classify the occupations of each person. As the CC saw it, the hierarchical division of labour should be employed to supplement the limited capability of local enumerators. Since the enumerators, it was assumed, could obtain information on individual occupation, they would be simply asked to send the returns to the central office, where more capable hands would make the abstracts.[161]

This CC's proposed machinery helps us understand the nature of the division of labour that the HSC envisioned in the enumeration of patients and the registration of cases. In summary, the structure is hierarchical. Enumerators were in the lowest level of the machinery of statistical observation and simply filled in the designated schedule. The medical officers in hospitals were in the middle rank and responsible for local supervision

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[158] For the distinction between 'collection' and 'abstraction', see the Census Committee's criticism of American census. Ibid. Such distinction was not necessarily new since the same point was made in a criticism of parliament education survey. 'It must be quite clear to every person who reflects on the subject, that the form in which a table of questions for circulation is drawn up, has not necessarily anything in common with the form in which the whole results will ultimately be arranged. The object of the table questions is to get the greatest amount of information, and to ensure its accuracy: the object of the table in which the collected information is ultimately registered, is to put the whole in that form in which it will be most useful to the public. It may happen that with these two different objects in view, the form of the questions and the form of the results will be altogether different.' 'Statistics of Education in England,' *Quarterly Journal of Education* 9 (1835), 70.

[159] 'Census Committee Report 1840,' 98.

[160] See Edward Higgs, *Making Sense of the Census Revisited: Census Records for England and Wales 1801-1901, a Handbook for Historical Researchers* (London: Institute of Historical Research, 2005), 10.

[161] The copy of proposed schedule in the Census Committee report gave an instruction to answer the occupation as the following: 'In this column should be inserted the sources of income, whether by proprietorship, profession, trade, or what other means, and whether as master, journeyman, or apprentice, or as an unskilled labourer, and at what labour; stating the occupation of every member of a family who labours for hire, and not merely in the domestic service of their own home.' Model answers included 'Draper, Master' and 'Charwoman.' 'Census Committee Report 1840,' 100.

over enumeration, as they would be assumed to have a good understanding both of local circumstances and of the scope of the grander scheme.[162] Those different roles were needed to ensure uniformity in the collected facts. The HSC, by contrast, assumed the highest responsibilities, as it provides a schedule and a registration form, which would define what particulars of the patients would be recorded and which would make the aggregation of facts separately collected by hospitals possible. The HSC also assumed the role of making abstracts so that it would remove difficulties from the process of filling in forms. The HSC reports would further classify diseases in accordance with the intricate GRO classifications, but at the head of the HSC was William Farr, who invented those very GRO classifications.[163] The registration of cases appeared to be similarly hierarchical. Although there was no clear indication of who would make the records of cases, it was the SSL that would provide the registry forms. Tabulation and abstraction were laid in the hands of a joint committee whose members were named by the SSL and the board and medical officers.

3-4. Prerequisites of Missing Value

In 1848, two SSL committees published reports based on their investigations into the state of the poor, which marked the end of the SSL's active involvement in the execution of original surveys.[164] One was the Working Class Committee, which investigated the housing conditions of the poor in Church Lane, St. Giles's. The other was the Hallam Committee, privately financed by Henry Hallam and Robert Aglionby Slaney and formed for inquiry into the poor of St George's in the East.[165] In the SSL, visiting was usually conducted by a paid agent. The Working Class Committee, however, gave a rare opportunity for fellows themselves to participate in visiting in the Church Lane investigation.

These two reports may appear to have a great contrast, as the Hallam Committee's report

[162] For a similar system, see the Census Committee's proposed division of labour.
[163] 'Hospital Statistics Committee Report,' 170.
[164] 'Report of a Committee of the Council of the Statistical Society of London, Consisting of Lieut.-Colonel W. H. Sykes, V.P.R.S., Dr. Guy, and F. G. P. Neison, Esq., to Investigate the State of the Inhabitants and Their Dwellings in Church Lane, St. Giles's,' *Journal of the Statistical Society of London* 11:1 (1848): 1–18; 'Report to the Council of the Statistical Society of London from a Committee of Its Fellows Appointed to Make an Investigation into the State of the Poorer Classes in St. George's in the East,' *Journal of the Statistical Society of London* 11:3 (1848): 193–249.
[165] Hallam provided £25 and Slandey £10. Robert Aglionby Slaney is a politician and a member of the SSL as well as the Diffusion of Useful Knowledge and the Central Society of Education. For his *ODNB* entry, see Clarke, Ernest. 2004 "Slaney, Robert Aglionby (1792–1862), politician." *Oxford Dictionary of National Biography.* [accessed on 9 Oct. 2018]

is filled with numbers in more than 20 tables while the Working Class Committee's report appears to be more descriptive. A few members of the Working Class Committee and its agent visited all the 32 houses in the Parish of St Giles. Their report provided detailed descriptions of each room in each house, which read like the following: 'State of rooms, filthy; state of furniture, bad and dirty; state of windows, 21 whole and 9 broken panes',[166] or 'State of rooms, clean; state of furniture, tidy; state of windows, whole.'[167]

The Working Class Committee's account of the housing conditions in Church Lane may appear to be anti-statistical for its little use of numerical expressions. Interestingly, the report suggests that the participation of fellows in visiting was specifically required to carry out detailed observations. It argued, 'As the value of your Committee's Report would much depend upon the detailed and graphic pictures which it might supply, your Committee resolved to inspect personally every room in every house.'[168] However, it should be noted that the agent and the committee members apparently provided answers to pre-prepared questions. The report gives answers to roughly the same types of questions. Moreover, the Working Class Committee report often gives a blank as an answer, as in the following: 'Number of persons ill, ——; deaths in 1847, ——. Country, Irish; trade, shoemaker, works at home.'[169] The report explains the blank: 'As a general rule, the blanks in the Report may be understood to indicate that the particulars specified were not ascertained.'[170] To register 'not ascertained' as a proper answer in the report, one had to have a question that was supposed be answered. Apparently, the existence of missing values did not bother the Working Class Committee. Nor did it the Hallam Committee, whose report had columns for 'Not Ascertained'. In this sense, these two committees had in common a preformed list of questions, which was a common strategy among the members of the SSL in this period.

The use of a standardised list of questions empowered inexperienced agents, turning them into competent enumerators. At the same time, it deprived them of their power to make their own observations. It did not matter, and should not have, whether each person had acute perception, as the role of the schedule was to make individual observers impersonal recording devices. When a survey was reduced to filling in the pre-prepared form, a costly visiting survey would not be very appealing. From this perspective, the disappearance of

166 'Working Class Committee Church Lane Investigation Committtee Report,' 2–3 (No. 2 Parlours).
167 Ibid, 6 (No. 5 Parlours).
168 Ibid, 2.
169 Ibid, 9.
170 Ibid, 3n.

visiting surveys from the SSL was probably not so surprising.

4. Conclusion

The SSL was established for the collection of facts. To meet this goal, it endeavoured to execute original surveys. At the same time, the SSL's Prospectus claimed the collection of existing facts to be equally important as that of new ones. It suggests the absence of preference in direct observation on the SSL's part, which led the SSL to solicit facts from other organisations and individuals. The SSL purported to be a central scientific organisation in British statistics and aimed to orchestrate various actors participating in this communal endeavour of coordinated statistical observation. The 1840 Council Report dreamed of the SSL becoming a scientific mint that produced statistical facts as the currency of science. While the execution of original surveys remained a legitimate method of fact-gathering, its cost deterred the SSL from pursuing this line of scientific activities and outsourced it to other actors, particularly governments, as they had unrivalled power for mobilising numerous observers. By 1848, the SSL gradually withdrew from the execution of original surveys and relocated its resources to the promotion of the statistical community.

While the SSL Council was drawing a blueprint of the statistical community, the SSL's specialised committees designed actual machineries for coordinated statistical observation. The mobilisation of numerous enumerators was essential in statistical observation, as it would provide far wider coverage than an individual observer could have hoped to achieve. In return, the use of nameless agents could have posed a threat to the credibility of collected facts. The Paper of Interrogatories project defined ordinary fact-gatherers as those who were capable of furnishing facts but incapable of determining what was worth studying. The issue of incompetent agents defined this way could be easily addressed, as, the SSL claimed, a well-prepared list of questions should guide those disoriented observes. The Education Committee was comfortable with employing obscure figures as agents because those agents were carrying schedules prepared by the committee. Similarly, the HSC designed common medical registration forms that were supposed to teach individual recorders what to observe and how to create unity among statistical facts separately collected by multiple London hospitals. The SSL committees also introduced a hierarchical division of labour, which supposedly saved agents from intellectually demanding tasks, as classification and abstraction were left in the hands of capable statisticians. The SSL minimised the work on the side of agents and succeeded in

generating trust in obscure enumerators among the statistical community. With this trust in nameless agents and the statistical community as a whole, the SSL was comfortable with accepting official statistics as genuine facts.

This chapter revealed the reason behind the mysterious disappearance of apparently ‘innovative’ visiting surveys from the SSL despite its early adoption. To the SSL, the essential point of statistical observation was the use of the well-designed fillable form not the use of paid agents, as visiting was adopted merely as an effective alternative to the distribution of a circular form. This explanation also fits the SSL’s indiscriminate use of different methods for fact collection.

When the SSL withdrew from using original surveys in 1848, the SSL came to have a solid scientific basis that allowed it to outsource the laborious works to individuals and governmental offices. The SSL’s participation in the first ISC apparently expanded the horizon of the statistical community far beyond the borders of the British Empire. When William Farr welcomed the participation of East Asian nations in 1872, he did not have to hold his new Asian colleagues in high regard. Anyone could join the statistical community, though their contribution may have varied according to their capacities. The statistical community could only survive with constant warm friendship among participants within the community, but it produced cold faceless statistical facts, as those facts were aggregated from numerous observers and detached from particular persons’ skills of observation.

This chapter’s discussion leads to the other aspects of the expansion of the statistical community. Most important is the SSL’s plan to constitute itself as a depository of statistical facts. Despite its financial difficulties in the late 1830s, the SSL created and maintained the *Journal of the Statistical Society of London* (*JSSL*) and its library for the accumulation of facts. The next chapter discusses these institutions in relation to the SSL’s commitment to the creation of the statistical community across time as well as space.

Chapter Two

Colourless Writings of Statisticians and Their Distant Readers

The Creation of the Journal of the Statistical Society of London, 1838–1858

1. Drawing on Existing Statistical Facts

In 1872, Francis Galton[1] published a paper titled 'Statistical Inquires into the Efficacy of Prayer' in which he investigated whether prayer actually improved one's health.[2] He compared the average longevity of affluent occupational groups with that of sovereigns, who were deemed to be more likely to receive prayers than the other groups, and found that members of royal families formed the shortest-lived group among people of affluence. He concluded, 'The prayer has therefore no efficacy.'[3] Galton's inquiry aimed to support John Tyndall,[4] who published a paper on the same topic earlier that year and provoked the 'prayer-gauge debate'.[5] In winter 1871, Albert Edward, future King Edward VII,[6] had remarkably recovered from deadly typhoid fever, as if in answer to nationwide prayers

[1] Francis Galton was a man of science and a cousin of Charles Darwin. His interest in heredity led him to develop eugenics as a supposed scientific discipline and to the mathematical treatment of biometric data, which resulted in the statistical idea of regression in statistics. He endowed the Galton Laboratory for National Eugenics in 1904 and then Galton Eugenics Professorship both at University College London. Karl Pearson became the first Galton professor in 1911 and developed modern mathematical statistics. For Galton's *Oxford Dictionary of National Biography* (*ODNB*) entry, see Cowan, Ruth Schwartz. 2005 'Galton, Sir Francis (1822–1911), biostatistician, human geneticist, and eugenicist.' *Oxford Dictionary of National Biography*. [accessed on 7 Oct. 2018] See also, Donald A. MacKenzie, *Statistics in Britain 1865-1930: The Social Construction of Scientific Knowledge* (Edinburgh: Edinburgh University Press, 1981).

[2] Francis Galton, 'Statistical Inquiries into the Efficacy of Prayer,' *Fortnightly Review* 12 (1872): 125–35.

[3] Ibid, 128.

[4] John Tyndall was a man of science and a member of the X Club, which played a crucial role in the science reform movement in the 1860s and 1870s. For Tyndall's *ODNB* entry, see Brock, W. H. 2006 'Tyndall, John (1820–1893), physicist and mountaineer.' *Oxford Dictionary of National Biography*. [accessed on 11 Oct. 2018]

[5] John Tyndall, 'The "Prayer for the Sick:" Hints Towards a Serious Attempt to Estimate Its Value,' *The Contemporary Review* 20 (1872): 205–10. For an overview of 'prayer-gauge debate', see Robert Bruce Mullen, 'Science, Miracles, and the Prayer-Gauge Debate,' in *When Science and Christianity Meet*, ed. David C. Lindberg and Ronald L. Numbers (Chicago: University of Chicago Press, 2003), 203–24. Also, see Frank M. Turner, 'Rainfall, Plagues, and the Prince of Wales: A Chapter in the Conflict of Religion and Science,' *Journal of British Studies* 13:2 (1974): 46–65; Stephen G. Brush, 'The Prayer Test: The Proposal of a "Scientific" Experiment to Determine the Power of Prayer Kindled a Raging Debate between Victorian Men of Science and Theologians,' *American Scientist* 62:5 (1974): 561–63. Katharine Anderson, *Predicting the Weather: Victorians and the Science of Meteorology* (Chicago ; London: University of Chicago Press, 2005), 161-167.

[6] Edward VII was the eldest son of Queen Victoria and Prince Albert. His brief reign, known as the Edwardian era, started in 1901 and ended in 1910. For his *ODBN* entry, see Matthew, H. C. G. 2016 'Edward VII (1841–1910), king of the United Kingdom of Great Britain and Ireland, and the British dominions beyond the seas, and emperor of India.' *Oxford Dictionary of National Biography*. [accessed on 11 Oct. 2018]

offered to him. This miraculous recovery, however, did not impress Tyndall. In 1872, Tyndall published a paper demanding the efficacy of prayer be tested by the scientific method. The stakes in this debate were significant, as it addressed the tension between the idea of divine intervention, either through miracle or special providence, and the idea of physical laws that could be discovered through the scientific method of induction. Tyndall's bold move can be seen as an implicit claim that science exclusively owned intellectual authority regarding the physical world, which resonated with the doubt on the scientific status of the biblical narrative common among men of science since the publication of *On the Origin of Species* in 1859 and *Essays and Reviews* in 1860.

Galton's paper can be seen in relation to this intriguing episode in the history of science, as his paper illustrates a tension between science and religion in Victorian society. At the same time, Galton's use of statistical facts deserves attention in its own right, as it sheds light on the place of facts and scientific observation in Victorian science—and statistics, in particular. Galton was aware that cases of unexpected and rapid recovery from critical conditions did occasionally occur. However, he questioned whether such rare occurrences should be attribute to divine intervention and argued for the need for a scientific approach to those events. Galton claimed, 'An unscientific reasoner will be guided by a confused recollection of crude experience. A scientific reasoner will scrutinise each separate experience before he admits it as evidence, and will compare all the cases he has selected on a methodical system.'[7] Galton then distinguished between two types of fact: a large collection of cases and isolated instances. Galton favoured the former because, in the latter, one would run the risk of choosing one-sided examples. According to Galton, facts had to be collected in large numbers and divided into groups, which in turn had to be compared with each other. The effects of prayers, as Galton saw it, could be tested only through using a methodically collected statistical data set.

Galton emphasised the importance of a well-organised collection of facts, but apparently, he did not feel the need to gather those facts himself. Galton drew on the data set collected and published by William Guy,[8] a notable member of the Statistical Society of London (SSL), in the *Journal of the Statistical Society of London* (*JSSL*). To test his hypothesis on the efficacy of prayer, Galton used a statistical table taken from Guy's paper published in 1859. Guy's 1859 paper was the final piece in his series of works on 'the duration of life' among different occupations and had nothing to do with testing the effects of prayer.

[7] Galton, 'Statistical Inquiries into the Efficacy of Prayer,' 125.
[8] For Guy's biographical information, see Introduction footnote 62.

In fact, unlike Galton's paper, Guy's paper apparently put forward no specific hypothesis to be tested. In addition to the apparent lack of theoretical implications, Guy's paper is noteworthy with respect to its method of data collection. His statistical tables were produced based on facts that he gleaned from books and reports written by someone else. In other words, Guy's paper was not 'original'. Since Guy himself was the editor of the *JSSL* between 1852 and 1856, his bookish method of statistical data collection should not have been an unusual writing practice among the SSL. His peculiar way of writing journal papers prompts us to think about the style of writing and reading in the *JSSL*.

As I have discussed in the Introduction, collaborative fact-gathering often shaped literary practices. Although historians use the *JSSL* as a primary source through which they can catch a glimpse of the SSL's activities, such as its scientific disciplinary work or involvement in a specific branch of statistics, few historians have paid attention to the SSL's literary practices that hold various texts together in the form of scientific periodicals. Mary Poovey is a rare exception, as she points out the importance of writing style among statisticians, although her analysis is more concerned with the style of reasoning.[9] The style of writing was particularly important for the history of the SSL, as early statistics was linked to a new way of writing. The SSL Council Report suggested in 1838 that the statisticians' writing style surpassed that of their predecessors: 'It is indeed truly said that, the spirit of the present age has an evident tendency to confront the figures of speech with the figures of arithmetic.'[10] The *Westminster Review*, however, published a critical review of the SSL's literary practices in the same year. The type of statistics that the SSL advocated, the review observed, was merely 'the numerical and tabulated form of stating and arranging facts', but 'a form of arrangement is not a science'.[11]

Guy's papers published in the *JSSL* thus pose the following questions: what motivated the SSL to create a scientific journal; why did Victorian statisticians write papers without hypotheses or original survey results; and how could such apparently trivial papers find readers? This chapter aims to answer those questions.[12]

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[9] Mary Poovey, *A History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society* (Chicago: University of Chicago Press, 1998), Ch. 7.
[10] Cited in Ibid, 312. For the original, see 'Fourth Annual Report of the Council of the Statistical Society of London,' *Journal of the Statistical Society of London* 1:1 (1838), 8.
[11] John Robertson, 'Statistical Society of London Exclusion of Opinions,' *The London and Westminster Review* 31 (1838), 72.
[12] For German case, see Hans Erich Bödeker, 'On the Origins of the 'Statistical Gaze': Modes of Perceptions, Forms of Knowledge and Ways of Writing in the Early Social Sciences,' in *Little Tools of Knowledge : Historical Essays on Academic and Bureaucratic Practices*, ed. Peter Becker and William Clark (Ann Arbor: University of Michigan Press, 2001), 169–95.

My argument is that the SSL's conception of existing facts, as opposed to that of fresh facts, shaped the style of writing and the reading of texts published in the *JSSL*. The SSL saw an equal usefulness in the arrangement and circulation of existing facts as in the collection of new facts. The SSL concentrated on the former and undertook the task to establish itself as a storehouse of existing facts. The *JSSL*, as well as the SSL library, was created to achieve this goal. The SSL's equal treatment of existing facts and new facts, combined with the marginalisation of individual observations in coordinated statistical observation, virtually depreciated the value of first-hand observation and left little difference in epistemic status between first-hand and second-hand observations in the production of statistical facts.

The SSL's unique scientific mission and conception of statistical facts allowed statisticians to glean existing facts from published parliamentary papers, newspapers, books, and reports, which resulted in the production of colourless papers in the *JSSL* that provided no hypothesis, no conclusion, and even no original data.

This practice of writing, in turn, moulded the style of reading. With the introduction of an index, the *JSSL* functioned as a reference book and provided readers with summarised statistical data that was ready for use. The *JSSL* was envisioned as a virtual place where individuals could share their existing collected facts and could connect with people with similar interests beyond geographical limitations. As well as being intended to serve its contemporaries, the *JSSL* was designed to serve posterity. Consideration for its future readership and their supposedly very different interests in what would be their past time led the *JSSL* to include statistical tables that might not appear interesting to its contemporaries but might appeal to readers in a distant future. The *JSSL* served to expand the community of statistical observers across space and time.

To demonstrate these points, this chapter examines the establishment of the *JSSL* and theories of information management discussed by statisticians.

2. The Collection of Existing Facts

2-1. Receiving, Recording and Circulating Facts

In June 1833, Adolph Quetelet,[13] a Belgian astronomer and future prince of early statistics,

[13] For Quetelet's biography, see Introduction footnote 57.

travelled to England. He was invited by William Whewell[14] and James David Forbes[15] to attend the third meeting of the British Association for the Advancement of Science (BAAS) held in Cambridge.[16] Quetelet brought with him some statistical materials on crime in France and Belgium but could not find an appropriate section to present his work. Richard Jones[17] offered his room for Quetelet's unofficial presentation. The event shaped the future of statistics in Britain, as it prompted the participants to create a new BAAS section dedicated to statistics, which was later named Section F.[18] On the morning of 27 June, John Elliot Drinkwater,[19] the future secretary of the SSL, attended Quetelet's talk and recorded the proceedings.[20] According to Drinkwater's notebook, the meeting was chaired by Robert Malthus[21] and attended by Charles Babbage,[22] Richard Jones, William

[14] For Whewell's biography, see Chapter One footnote 75.

[15] James David Forbes was a physicist and geologist. He was an avid supporter of the British Association for the Advancement of Science (BAAS). He was a friend of William Whewell and George Airy. For his *ODNB* entry, see Smart, R. N. 2012 'Forbes, James David (1809–1868), physicist and geologist.' *Oxford Dictionary of National Biography.* [accessed on 12 Oct. 2018]

[16] M. J. Cullen, *The Statistical Movement in Early Victorian Britain: The Foundations of Empirical Social Research* (Hassocks: Harvester Press, 1975), 78. Jack Morrell and Arnold Thackray, *Gentlemen of Science: Early Years of the British Association for the Advancement of Science* (Oxford: Clarendon, 1981), 374.

[17] For Jones' biography, see Chapter One footnote 74.

[18] The formation of the Section F is well covered by several historians. Cullen, *The Statistical Movement*, Ch. 6. See also, Victor L. Hilts, 'Aliis Exterendum, or, the Origins of the Statistical Society of London,' *Isis* 69:1 (1978): 21–43; Lawrence Goldman, 'The Origins of British 'Social Science': Political Economy, Natural Science and Statistics, 1830-1835,' *The Historical Journal* 26:3 (1983): 587–616. Also, see Susan Faye Cannon, *Science in Culture: The Early Victorian Period* (Folkestone: Dawson, 1978), 240–245. For the primary sources, see BAAS official reports, John Eliot Drinkwater's notebook, and Charles Babbage's accounts. *Lithographed Signatures of The Members of the British Association for the Advancement of Science, Who Met at Cambridge, June M.DCCC.XXXIII. with a Report of the Proceedings at the Public Meeting during the Week* (Cambridge: Pitt Press, 1833), 82; British Association for the Advancement of Science, *Report of the British Association for the Advancement of Science. 3rd Meeting (1833)* (London, 1834), xxvii-xxx. Drinkwater's notebook is reproduced in the following article. 'The Royal Statistical Society: Early Days,' *Journal of the Royal Statistical Society* 98:1 (1935): 140–51. For Babbage's account, see Charles Babbage, *The Exposition of 1851; or, Views of the Industry, the Science, and the Government of England*, Second Edition (London: John Murray, 1851), 16–18. Charles Babbage, 'Letter From Charles Babbage, ESQ., F.R.s., &c. &c.,' in *Report of the Proceedings of the Fourth Session of the International Statistical Congress: Held in London July 16th, 1860, and the Five Following Days*, ed. William Farr (H.M. Stationery Office, 1861), 505–7. Although I have not consulted it myself, the following material is cited by other historians. 'Note sur l'origine de la société de statistique de Londres par M. Babbage', Quetelet Papers, Bibliotheque Royale de Belgique.

[19] For Drinkwater's biography, see Chapter One footnote 77.

[20] 'Drinkwater's Notebook,' 140–141.

[21] Thomas Robert Malthus was an eminent political economist known for his work *An Essay on the Principle of Population*. He served as a professor of history and political economy at East India College. For his *ODNB* entry, see Pullen, J. M. 2008 'Malthus, (Thomas) Robert (1766–1834), political economist.' *Oxford Dictionary of National Biography.* [accessed on 12 Oct. 2018]

[22] Charles Babbage was a Cambridge mathematician. He invented a difference engine and then designed an analytical engine, which is seen as pioneering works in the field of computing. For the SSL's commemoration of Babbage as one of its founders, see Chapter Five of this thesis. For his *ODNB* entry, see Swade, Doron. 2009 'Babbage, Charles (1791–1871), mathematician and computer pioneer.' *Oxford Dictionary of National Biography.* [accessed on 7 Oct. 2018]

Henry Sykes,[23] William Somerville,[24] and Rev. Dr George D'Oyly.[25] The meeting was apparently a success, and later that same day at the general meeting, Babbage announced the formation of a new section for promoting statistical inquiries.[26]

Quetelet's presentation at the BAAS also led to the formation of the SSL.[27] On 28 June 1833, a day after Babbage and others agreed on the creation of the Statistical Section, a meeting was held to discuss the objects of the new section and the establishment of a permanent committee.[28] The chairman, Richard Jones, asked Drinkwater to read a preliminary sketch for the cultivation of statistical science in which Drinkwater envisioned the establishment of the SSL. Drinkwater's sketch reviewed the insufficient state of statistical inquires in Great Britain and pointed out the lack of full and systematic enumeration. The Statistical Section, Drinkwater argued, had to 'originate' rather than 'promote' the advancement of statistical science.[29] To this end, he examined the most efficient machinery for collecting and circulating information.[30] Drinkwater maintained that, while governmental aid was essential for statistical inquiries, statisticians needed to show their own initiative to prove that they deserved the state's assistance.[31] In order to demonstrate the usefulness of statisticians to the state, Drinkwater recommended setting up a network of statistical communication centred on the permanent committee:

> We may at once, therefore, receive statistical communications, we may record them, we may circulate them. To effect these objects, however, some machinery must evidently be at once established somewhat more permanent than such a Section as the present. [32]

Drinkwater argued that the permanent committee 'must evidently' be located in London and 'be invested at once with the power of receiving communications in the name of the

[23] For Sykes' biography, see Chapter One footnote 79..
[24] William Somerville was a military surgeon at the Royal Hospital, Chelsea. For his *ODNB* entry, see Clerke, E. M. 2006 'Somerville, William (1771–1860), military surgeon.' *Oxford Dictionary of National Biography*. [accessed on 12 Oct. 2018]
[25] Reverend Dr George D'Oyly was a Fellow of the Royal Society, Cambridge wrangler, rector of Lambeth, and founder of King's College London.
[26] *Proceedings of the BAAS Cambridge Meeting in 1833*, 82. Goldman points out that Whewell was interested in discussing statistics at the BAAS before Quetelet's arrival. Goldman, 'The Origins of British "Social Science",' 592–593.
[27] The prospectus can be found in the BAAS report published in 1834. 'Prospectus of the Objects and Plan of the Statistical Society of London,' in *Report of the Third Meeting of the British Association for the Advancement of Science; Held at Cambridge 1833* (London: John Murray, 1834), 492–95.
[28] 'Drinkwater's Notebook,' 142.
[29] Ibid, 143.
[30] Ibid, 143.
[31] Ibid, 143–144.
[32] Ibid, 144.

Society'.[33] Drinkwater envisaged that the permanent committee, the future SSL, would collect statistical materials from individuals and public bodies, regardless of whether they were English or foreign.[34] The coverage of the study was to go beyond the British Isles to include all parts of the world.[35] Abundant information was, as Drinkwater saw it, already available. Drinkwater claimed that parliamentary and other public documents were a rich mine from which the committee could extract information.[36] Drinkwater set out the future SSL's 'duty' as methodising and publishing existing materials as much as its funds would allow.[37] It should be noted that the main rationale for creating the permanent committee was to arrange existing facts. Although Drinkwater did not exclude original research entirely from the objectives, he cautiously added that 'a limited power' should be invested with this task.[38]

The meeting resolved that the permanent committee be established in London and that Babbage be appointed the president and Drinkwater the secretary.[39] The permanent committee held a meeting on 21 February 1834 at 1 Dorset Street, Manchester Square, London.[40] It agreed that the SSL be established and its first meeting be held on 15 March 1834. Henry Petty-Fitzmaurice,[41] third Marquess of Lansdowne and a descendant of William Petty,[42] assumed the first presidency of the SSL.

2-2. New Facts and Existing Facts

The SSL's Prospectus was published in the BAAS report of the 1833 Cambridge meeting. It set out the SSL's objectives in accordance with Drinkwater's sketch. The Prospectus declared that the SSL was established for the 'procuring, arranging, and publishing' of social facts.[43] To meet this goal, the SSL distinguished between two types of facts—fresh

[33] Ibid, 144.
[34] Ibid, 144.
[35] Ibid, 145.
[36] Ibid, 144.
[37] Ibid, 144.
[38] Ibid, 144.
[39] Ibid, 144.
[40] 'B2/1 Council Minutes,' London, Royal Statistical Society Archive, 1 (21 Feb 1834).
[41] Henry Petty-Fitzmaurice was president of the SSL during 1834–1836 and 1842–1843. For his ODNB entry, see Wright, C. J. 2009 'Fitzmaurice, Henry Petty-, third marquess of Lansdowne (1780–1863), politician.' *Oxford Dictionary of National Biography*. [accessed on 12 Oct. 2018]
[42] William Petty, with the help of John Graunt, created political arithmetic, which is often considered one of the origins of statistics. For his ODNB entry, see Barnard, Toby. 2013 'Petty, Sir William (1623–1687), natural philosopher and administrator in Ireland.' Oxford Dictionary of National Biography. [accessed on 12 Oct. 2018]
[43] 'Prospectus of the Statistical Society of London,' 492.

facts and existing facts—and accordingly divided its mission into two kinds of fact-gathering—the collection of 'fresh statistical information' and 'arranging, condensing, and publishing much that already exists'.[44] Since Chapter One has discussed the former, this chapter discusses the latter. It might appear that the SSL had nothing to offer for the collection of facts that were already 'collected' by someone else. A key to understanding this strange task lies in the SSL's contribution to the methodisation, circulation, and publication of facts.

As I have discussed in Chapter One, the SSL was cautious about expending its resources on original data-gathering. The SSL was willing to entrust this demanding task to other parties, such as private individuals and governmental offices. The Prospectus called for cooperation from the Statistical Department at the Board of Trade (SDBT), scientific societies, or Englishmen living or travelling in foreign countries to supply statistical facts to the SSL. The SSL was anxious to see statistical societies springing up in the provinces so that it could receive statistical information from them.[45] While the SSL was cautious not to engage in extensive original observation, it anticipated a joint publication project with provincial statistical societies that, with the single exception of the Manchester Statistical Society (MSS), did not even exist yet. Facts collected from such local statistical societies, the SSL envisioned, 'may properly enter into a common publication, and will afford safe grounds for comparing the present condition and future progress of different parts of the empire'.[46] The SSL's zest for publication can be best understood when it is seen in connection to the SSL's public role of recording existing facts. The SSL maintained:

> The collection, by such means and agents, of new statistical materials will form, it will be remembered, only one part of the Society's work. To condense, arrange, and publish those already existing, but either unpublished, or published only in an expensive or diffused form, or in foreign languages, would be a task of equal usefulness. Authentic statistical accounts, even of an old date, may perhaps advantageously receive some attention.[47]

The SSL claimed that publishing existing facts, which could include even historical records, was equally as useful as the collection of new facts. The rationale for this claim, it appears, was the unsatisfactory state of storing information. Facts that already existed were often defective or unavailable to the public. The SSL set out its role as being to

[44] Ibid, 493.
[45] Ibid, 494.
[46] Ibid, 494.
[47] Ibid, 494.

ensure the authenticity of facts and to provide them to the public in an accessible format. The SSL claimed its utility regarding already-collected facts was to be found in its publication activities. This turns our attention to the SSL's publication projects. The next section addresses these projects.

3. Publishing Statistical Facts

3-1. The SSL's Early Publications and the Selection of Papers for Printing

The SSL's first periodical publication was the *Proceedings of the Statistical Society of London* (*PSSL*), published between 1834 and 1838. This was the record of the SSL's ordinary meetings, which reported the person in chair, the selection of new fellows, and abstracts of the papers read in the meetings. In 1837, the SSL published the *Transactions of the Statistical Society of London* (*TSSL*), a collection of six full papers. Some of those six papers had already been read at the SSL's ordinary meetings, and their abstracts were included in the *PSSL*. Although the *TSSL* was marked Vol. 1, indicating a serial publication, there were no follow-up volumes.[48] In 1838, the *JSSL* was created to replace the *PSSL* and *TSSL*. The *JSSL* was published until it was renamed the *Journal of the Royal Statistical Society* (*JRSS*) in accordance with the SSL's transition to the Royal Statistical Society (RSS) in 1887.The table 1 summarises the SSL's periodicals.[49]

Table 1: List of the SSL's Periodicals

1834–1838	Proceedings of the Statisical Society of London (PSSL)
1837	Transactions of the Statistical Society of London (TSSL)
1838–1886	Journal of the Statistical Society of London (JSSL)

The *PSSL* published the abstracts of papers read during the SSL's ordinary meetings. The SSL's ordinary meetings were held monthly between November and June. The first ordinary meeting was held 17 November 1834. Three presenters, all of them Council members, read their papers: Charles Hope Maclean[50] read 'An account of the Proceedings

[48] Royal Statistical Society, *Annals of the Royal Statistical Society, 1834-1934* (London: Royal Statistical Society, 1934), 34–35.

[49] The most detailed account of the SSL's earliest publication project is given by the following. Ibid. 56–63. Also, see Sidney Rosenbaum, 'Precursors of the Journal of the Royal Statistical Society,' *Journal of the Royal Statistical Society. Series D (The Statistician)* 50:4 (2001): 457–66; Sidney Rosenbaum, 'Transactions of the Statistical Society of London (1837),' *Journal of the Royal Statistical Society. Series A (Statistics in Society)* 165:1 (2002): 173–85.

[50] Very little is known about him, but he was apparently one of the SSL Honorary Secretaries in 1834–

of the Statistical Section of the British Association, in September 1834'; Woronzow Greig[51] read 'On the Character and Present Condition of the Irish Labourer'; and G. R. Porter[52] read 'Analysis of the Accounts and Depositors of the Devon and Exeter Savings' Bank', for which the data were apparently provided by a person called William Lee.[53]

The SSL had two other types of meetings: annual meetings and Council meetings. The annual meeting was a meeting in which the Council reported on the state of the SSL to all the attended fellows and discussed important SSL business , such as the election of Council members. The Council meeting was a closed meeting where the Council members discussed the daily management of the SSL. The selection of papers to be read at ordinary meetings was apparently decided during the Council meeting, but there was no formal system for this selection process. In the earliest days, the Council apparently did not have enough papers to fill the meeting's duration. On 10 December 1834, the Council requested Thomas Vardon,[54] one of the Council members, write a paper on 'Parliamentary Representation of England and Wales' and asked Porter to bring up 'a form of return from Saving Banks, similar to the one previously read at the Ordinary Meeting'.[55]

The first submitted paper to be approved by the Council for reading at an ordinary meeting seems to be William Jacob's[56] paper titled 'Observations and Suggestions Respecting the Collection, Concentration, and Diffusion of Statistical Knowledge Regarding the State of the Nation'. On 31 October 1834, a few weeks before the first ordinary meeting, the

1839. Royal Statistical Society, *Annals*, 21. There is no *ODNB* entry for him.

[51] Ibid. 21. Woronzow Greig was barrister and one of the Honorary Secretaries in 1834–1839. He apparently was an SSL fellow until his death in 1865. For his ODNB entry, see Appleby, John H. 2004 'Greig, Woronzow (1805–1865), barrister.' Oxford Dictionary of National Biography. [accessed on 12 Oct. 2018]

[52] For Poreter's biography, see Chapter One footnote 76.

[53] Charles Maclean, 'An Account of the Proceedings of the Statistical Section of the British Association in September 1834,' *Proceedings of the Statistical Society of London* 1:1 (1834): 1-8*; Woronzow Greig, 'On the Character and Present Condition of the Irish Labourer,' *Proceedings of the Statistical Society of London* 1:1 (1834): 8*-8*; G. R. Porter, 'An Examination of Some Facts Obtained at the Recent Enumeration of the Inhabitants of Great Britain, in Continuation of a Paper Read Before the Statistical Society of London, on the 20th December, 1841,' *Journal of the Statistical Society of London* 6:1 (1843): 1–16.

[54] This person is probably Thomas Vardon, who was a librarian. For his *ODNB* entry, see Pond, C. C. 2004 'Vardon, Thomas (1799–1867), librarian.' Oxford Dictionary of National Biography. [accessed on 12 Oct. 2018]

[55] 'B2/1 Council Minutes,' 20–21 [10 Dec 1834].

[56] William Jacob was a merchant and the comptroller of corn returns at the Board of Trade. He worked for the Board of Trade in 1822–1841. For the importance of his paper regarding the theory of statistical organisation, see Chapter Three of this thesis. For his ODNB entry, see Goodwin, Gordon. 2004 'Jacob, William (1761/2–1851), merchant and writer on the corn trade.' *Oxford Dictionary of National Biography*. [accessed on 12 Oct. 2018]

Council received a paper from Jacob. The Council requested the secretaries 'look through Mr Jacob's observations and suggestions on Statistical Knowledge, and select such parts of them as appear suited for being read at the Ordinary Meeting', which might be called an informal review.[57] Selected parts of Jacob's paper were read on 15 December 1834 and on 19 January 1835.[58]

The publication of the *PSSL* was not formalised until 1835. In July 1834, the Council formed the Publication Committee and gave £100 for preparing materials for a 'Volume of Transactions'.[59] This 'Volume of Transactions' should not be confused with the *PSSL*, as the Council envisioned this volume to be more than the records of ordinary meetings and that it should include statistical information collected by the Council and papers already in the hands of the Council. The Council intended to publish this volume 'as soon as it [had] accumulated original materials of sufficient value', but it was apparently never published.[60] In the meantime, the publication of abstracts was also considered in the same report. The Council resolved 'to print for the use of the fellows, an abstract of the monthly proceedings and papers read to the Society'.[61] In February 1835, William Sykes proposed the publication of abstracts of papers that were read at the ordinary meeting in octavo form, which became the *PSSL*.[62] In March 1835, Sykes' motion was approved at the Council meeting, and it was decided to print and circulate the *PSSL* among the fellows.[63]

The Council appointed the first individual referee on 13 May 1836. A man named Alexander Trotter[64] had sent his observation on 'Farm Bookkeeping' to the SSL.[65] The paper was referred to Charles Lemon,[66] who then approved the paper for reading at the ordinary meeting on 16 May 1836.[67] The selection process was relatively lax, as most of

[57] 'B2/1 SSL Council Minutes.' p. 15 [31 Oct 1834]
[58] William Jacob, 'Observations and Suggestions Respecting the Collection, Concentration, and Diffusion of Statistical Knowledge Regarding the State of the Nation,' *Proceedings of the Statistical Society of London* 1:1 (1834): 8*–8*; William Jacob, 'Observations and Suggestions Respecting the Collection, Concentration, and Diffusion of Statistical Knowledge Regarding the State of the Nation,' *Proceedings of the Statistical Society of London* 1:2 (1835): 9–11.
[59] 'B2/1 SSL Council Minutes,' 13 [14 July 1834].
[60] 'First Council Report, March 16, 1835 in A1/1 Reports of Council & Lists of Fellows, 1834-1853'London, Royal Statistical Society Archive, 33.
[61] Ibid, 33
[62] 'B2/1 SSL Council Minutes,' 31 [18 Feb 1835, 25 Feb 1835].
[63] Ibid, 35 [4 Mar 1835].
[64] No information about this person. No *ODNB* entry,
[65] 'B2/1 SSL Council Minutes,' 97 [13 May 1836].
[66] Sir Charles Lemon was a Whig politician. He was one of the original members of the SSL and became president during 1836–1838. There is no *ODNB* entry for him.
[67] 'B2/1 SSL Council Minutes,' 97 [13 May 1836] .

the papers were approved straightaway for reading. However, there were a few exceptions. On 12 May 1837, Arthur de Capell Broke's[68] paper on the state of prostitution in Lambeth was read at a Council meeting, but it was 'ordered to be laid aside until further communication concerning it be received from Sir Arthur de Broke'.[69] To answer the Council's request, Broke resubmitted a revised paper, which was referred to Lemon, who then approved it for reading at the ordinary meeting on 19 June 1837.[70] The next month, the Council wrote its first rejection letter, to Edward Swaine. The paper, titled 'Nature and Objects of Statistics', was originally submitted in May and was referred to Holt Mackenzie.[71] The Council did not record a report from Mackenzie, but seemingly his answer was unfavourable. The Council discussed whether the paper should be read in whole or part, but eventually decided to decline the proposed paper altogether because the Council was reluctant to introduce 'abstract consideration of this nature'.[72] The SSL politely but firmly declined the proposed paper. The rejection letter read:

> It has since been laid before the Council, & I am directed to explain the cause of this delay, & to thank you for the trouble you have taken in preparing the paper in question, which the council would have been glad to have obtained at an earlier stage of the Society's existence. The Members of the Council to whom it was referred expressed a very favourable opinion of the manner in which you had stated the subject, but they conceived it inexpedient at present to bring it before the Society.[73]

The introduction of a more formal selection system was proposed in the process of making the *TSSL*. In March 1836, Sykes presented a motion regarding the publication of the *TSSL*.[74] The Council approved it and appointed a committee to select papers for publication. The committee consisted of five members: Sykes, Henry Hallam,[75] W. J.

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[68] Arthur de Capell Broke was a geographer and traveller. He was a fellow of both the Royal Geographical Society and the Royal Society. For his *ODNB* entry, see Baigent, Elizabeth. 2004 'Broke [Brooke], Sir Arthur de Capell [formerly Arthur Supple], second baronet (1791–1858), geographer.' *Oxford Dictionary of National Biography*. [accessed on 12 Oct. 2018]

[69] 'B2/1 SSL Council Minutes,' 146 [12 May 1837]. In the Council Minutes, he was mentioned as Arthur Capell de Broke.

[70] Ibid, 150 [9 Jun 1837]. Its title suggests that the inquiry was originally conducted by a surgeon called Henry W. Dewhurst, whose information is not found in the *ODNB*.

[71] Ibid, 148 (29 May 1837). Holt Mackenzie was the vice president of the SSL, at least in 1839–1840. He was probably a colonial administrator in India, but this is not verified by the *ODNB*, as there is no *ODNB* entry for him.

[72] Ibid, 150, 152 (9 June, 16 Jun 1837).

[73] 'D1/1 Letter Books of the Secretary and Assistant Secretary of the Society, 1834-1843' (London, n.d.), Royal Statistical Society Archive, [62-63] (31 July 1837). The delay mentioned in the letter was caused by mix-up between the SSL's secretary's private correspondences and official letters,

[74] 'B1/1Anniversary Meetings,' 83, 85 (19 February and 4 March 1836).

[75] For Hallam's biography, see Chapter One footnote 32.

Blake,[76] G. R. Porter, and Charles Hope Maclean.[77] This *TSSL* Publication Committee was independent from the already-formed Publication Committee, but they eventually merged.[78] The Publication Committee inquired into the estimated cost of publishing the *TSSL* through several different printers, including Charles Knight,[79] who undertook the job in the end.[80] The Council sanctioned the Publication Committee's request to print a thousand copies of the first part of the *TSSL*.[81]

In May 1837, Sykes proposed a system of selecting papers for the second part of the *TSSL*, which was never published.[82] In the new selection system, the Council would refer each paper to one fellow for perusal after a reading at ordinary meetings. The referee would report to the Council whether a paper should be published in the *TSSL*. The Council would hold a ballot to decide whether they would accede to the referee's recommendation.[83] The new system went into effect in July 1837.[84] Four papers read at the19 June ordinary meeting were referred to Porter for review: Sykes' short comparison of the ages and diseases among miners and common labourers in Cornwall, Earl Fitzwilliam's account of returns to agricultural queries, Broke's paper on the state of prostitution in Lambeth, and Frederick Hill's[85] 'Second Report of the Inspector of Prisons for Scotland'.[86] Porter recommended Sykes' and Fitzwilliam's papers be printed while Broke's and Hill's not be. The Council, by ballot, accepted his recommendation.[87] In December 1837, Rawson

[76] Nothing is known about him. No *ODNB* entry for him.
[77] 'B1/1Anniversary Meetings,' 83, 85 (19 February and 4 March 1836).
[78] 'B2/1 SSL Council Minutes,' 93 (22 April 1836).
[79] Charles Knight was a printer and famous for his service for the Society for the Diffusion of Useful Knowledge. His most known work is *Penny Magazine*. As I will discuss later in this chapter, Knight also took up the publication of the JSSL for the first year. For his *ODNB* entry, see Rosemary Mitchell, 'Knight, Charles (1791–1873)', *Oxford Dictionary of National Biography*, Oxford University Press, 2004; online edn, Jan 2008 [http://www.oxforddnb.com/view/article/15716, accessed 31 July 2017]
[80] 'B2/1 SSL Council Minutes,' 93 (22 April 1836) and 'D1/1 SSL Letter Books,' 33–34 (28 Apr 1836).
[81] Ibid, 99 (27 May 1836).
[82] Ibid, 145, 148 (5 May 1837 / 29 May 1837).
[83] Ibid, 148 (29 May 1837).
[84] Ibid, 157 (3 July 1837).
[85] Nothing is known about him. No *ODNB* entry for him.
[86] William Henry Sykes, '[A Short Abstract from a Comparative Account, by Mr. Langon, of the Ages and Diseases of 240 Miners, and 120 Common Labourers, in Cornwall],' *Proceedings of the Statistical Society of London* 1:11 (1837): 296–97; Earl Fitzwilliam, '[Some Elaborate Returns to Agricultural Queries Issued by Earl Fitzwilliam],' *Proceedings of the Statistical Society of London* 1:11 (1837): 297; H. W. Dewhurst, 'On the State of Prostitution in the Parish of Lambeth, Deduced from Inquiries Made in January, 1835, at the Request of Sir Arthur de Capell Broke, Bart., F.R.S., by H. W. Dewhurst, Esq., Surgeon, &c,' *Proceedings of the Statistical Society of London* 1:11 (1837): 298–301; Frederick Hill, 'Second Report of the Inspector of Prisons for Scotland,' *Proceedings of the Statistical Society of London* 1:11 (1837): 301–8.
[87] 'B2/1 SSL Council Minutes,' 156 (3 July 1837).

Rawson[88] proposed a modification of the system because, he observed, Sykes' system took too long to print papers after reading at the ordinary meetings.[89] To resolve this issue, Rawson's system requested a referee make a recommendation that simultaneously regarded whether a paper should be read at an ordinary meeting and printed in the *TSSL* after reading. The Council reserved the right to make the final decision.[90] Rawson slightly changed the phrasing for the appointment of referees to allow for more referees, as, in his new system, a paper was referred to 'the Member or Members of the Council', as opposed to 'some one member of the Council, or other Fellow of the Society' in Sykes' system.[91]

This system was used to select the papers that would form the second part of the *TSSL*. However, the Council decided to suspend and eventually abort the *TSSL* project. The fourth Council Report of 1838 cited a financial reason to justify its action:

> Several of the papers which have been read at the ordinary Meetings during the past year, have been of a highly interesting character. Of these the more important have been selected by the Council to form the second Part of the first Volume of the Society's Transactions; but at present it has been deemed expedient not to appropriate the limited funds of the Society to the expense of proceeding with a further portion of this costly publication, while the outlay required by the Committees for the prosecution of original enquiries seems to promise a more direct return of advantage to the interests and progress of the Society.[92]

The SSL abandoned the *TSSL*, but it did not end the publication project entirely. On 23 March 1838, right after the above-quoted announcement at an annual meeting on 15 March 1838, a new committee was formed to consider the 'expediency of publishing a Journal, to be entitled the Journal of the Statistical Society of London'.[93] A week after, the Council decided on the creation of the *JSSL*.[94] In April 1838, the Council circulated a letter among fellows announcing the publication of the *JSSL*.[95] The first issue of the *JSSL* was published in May 1838, replacing the *TSSL* and the *PSSL*, whose final volume recorded the ordinary meeting in January 1838. This raises the questions as to how and why the Council concluded that the *JSSL* was a necessity and how and why they defended

[88] Rawson W. Rawson was the first editor of the *JSSL*. He resigned as editor when he accepted a position as a colonial officer in Canada. He was the president of the SSL in 1884–1886. There is no entry for him in *ODNB*.
[89] 'B2/1 SSL Council Minutes.' Pp. 164, 167 (1 Dec 1837, 15 Dec 1837)
[90] Ibid, 164, 167 (15 Dec 1837).
[91] Ibid, 148, 164, 167 (29 May 1837, 1 Dec 1837, 15 Dec 1837).
[92] '1838 Council Report,' 7.
[93] 'B2/1 SSL Council Minutes,' 186 (23 March 1837).
[94] Ibid, 187–188 (30 March 1837).
[95] Ibid, 192 (20 April 1838).

its utility despite the financial burden it would cause.

3-2. Creation of the *JSSL*

3-2-1. Selection of Papers for the *JSSL*

The SSL published the first issue of the *JSSL* in May 1838 and continued regular publication of the journal until the *JRSS* took over in 1887. The SSL published the *JSSL* quarterly, except during the first five years. Between May 1838 and January 1839, the SSL published nine monthly issues, which comprised the first volume. The second volume included six issues covering the period between February 1839 and January 1840. Volumes Three and Four consisted of four issues, but Volume Five had only three issues. The publication of Volume Six in 1843 established the *JSSL*'s basic style, with each volume consisting of four issues. In 1853, the publication month for each issue was fixed: the first issue was published in March, the second in June, the third in September, and the fourth in December. The SSL had planned to publish a special volume to celebrate its jubilee in 1884, but this plan had to be postponed due to the death of Prince Leopold, the fourth son of Queen Victoria, and subsequent mourning. The Jubilee Volume was published in 1885.[96]

Upon publication of the *JSSL*, the Council created the Office of the *JSSL* Editor, who was chosen from the society's honorary secretaries. Following the recommendation of James Heywood[97] and Porter, the Council appointed Rawson as the first editor of the *JSSL*.[98] When Rawson moved to Canada in 1842,[99] Joseph Fletcher[100] succeeded him in the editorship.[101] Guy took over the editorial position after the sudden death of Fletcher in

[96] Royal Statistical Society, *Annals*, 139–140.
[97] James Heywood was a social reformer and member of Parliament born in Manchester. A younger brother of Benjamin Heywood, who was the founding president of the MSS, James was a member of the MSS as well as the SSL. He was an active member of the SSL and contributed many articles to the *JSSL*. He was SSL president in 1875–1877. For his ODNB entry, see Curthoys, M. C. 2009 'Heywood, James (1810–1897), politician, university reformer, and philanthropist.' *Oxford Dictionary of National Biography*. [accessed on 12 Oct. 2018]
[98] 'B2/1 SSL Council Minutes,' 188 (30 March 1837).
[99] See his obituary in the *JSSL*: 'Sir Rawson W. Rawson,' *Journal of the Royal Statistical Society* 62:4 (December 1, 1899), 677.
[100] Joseph Fletcher was an active member of the SSL and published many papers in the *JSSL*. He was particularly interested in crime and education, or, as he called it, 'moral statistics'. In 1844, he became a school inspector. For his ODNB entry, see Alborn, Timothy L. 2008 'Fletcher, Joseph (1813–1852), statistician and school inspector.' *Oxford Dictionary of National Biography*. [accessed on 12 Oct. 2018]
[101] Cullen, *The Statistical Movement*, 102.

1852.[102] Guy was the editor of the *JSSL* until 1856, when William Newmarch[103] replaced him.[104] Newmarch resigned from his office in December 1862 to start working in a London bank.[105] Fredrick Purdy[106] served as editor between 1863 and 1873.[107] During Purdy's editorship, the *JSSL*'s list of Council members and officers included the editor's name, but it was removed when Fredric Mouat replaced Purdy in 1874.[108] Mouat only served as editor in 1874 and 1875,[109] when he was replaced by Robert Giffen.[110] After the *JRSS* replaced the *JSSL* in 1887, Giffen retained his editorship until 1891.[111] The table 2 summarises the editors' names and their periods of service.

Table 2: List of Editors of the *JSSL* (*JRSS* after 1887)

1838–1840	Rawson W. Rawson
1840–1852	Joseph Fletcher
1852–1856	William A. Guy
1856–1862	William Newmarch
1862–1873	Fredrick Purdy
1874–1875	Fredrich Mouat
1876–1891	Robert Giffen

The editor's work included the selection of papers for the *JSSL*. On 30 March 1838, the Council resolved that the editor be appointed and under the control of the Council.[112]

[102] See his obituary in the *JSSL,* 'Dr. William A. Guy,' *Journal of the Statistical Society of London* 48:4 (1885), 651.
[103] For Newmarch's biography, see Introduction footnote 88.
[104] 'Dr. William A. Guy,' 651.
[105] 'At a Meeting of the Council of the Statistical Society, Held at the Rooms of the Society, 12 St. James's Square, on Thursday, 11th December, 1862, Colonel Sykes, M.P., F.R.S., Vice-President, in the Chair the Following Communication from William Newmarch, Esq., F.R.S., Was Read,' *Journal of the Statistical Society of London* 26:1 (1863), 78.
[106] Fredrick Purdy was an active member of the SSL and contributed papers to the *JSSL* in the 1860s. There is no *ODNB* entry for him.
[107] From 1870, it also notes that the collector was James Stark. For the collector's job, see Royal Statistical Society, *Annals,* 30.
[108] *Journal of the Statistical Society of London*, 37 (1874), iii.
[109] '[Obituary]: Dr. Frederic John Mouat, M.D., LL.D.,' *Journal of the Royal Statistical Society* 60:2 (June 1, 1897), 435. There is no *ODNB* entry for him.
[110] Robert Giffen was an economic writer and became the head of the SDBT in 1876. He was SSL president in 1882–1884. Giffen is remembered today through 'Giffen goods', which was named after him by Alfred Marshall. For his idea regarding the statistical office, see Chapter Three of this thesis. For his ODNB entry, see Howe, A. C. 2008 'Giffen, Sir Robert (1837–1910), economist and statistician.' *Oxford Dictionary of National Biography*. [accessed on 12 Oct. 2018]
[111] Royal Statistical Society, *Annals*, 228.
[112] 'B2/1 SSL Council Minutes,' 188 (30 March 1837).

Since the Council did not meet over the summer, the Council appointed the Publication Committee 'for the purpose of directing, in conjunction with the Editor, the selection and preparation of articles for publication in the Journal'.[113] The exact nature of the editor's role and the management of the Publication Committee is unknown since the Publication Committee's minutes were lost at some point. What one can infer from the existing Council minutes from this period is that Rawson's review system for the *TSSL* was adopted for the *JSSL*'s process of selecting papers and the Council made the final decision in accepting papers. The following example illustrates how the selection system for the *JSSL* worked. In 1852, Porter sent back a referee report to the Council:

> I have read the Paper of Mr Crawford on Coffee and beg to state my opinion that it is a fitting paper to be read at one of the ordinary meetings. I am also of opinion that the same paper may be printed in the Journal of the Society.[114]

The second referee, W. D. Oswald,[115] simply stated, 'I agree to Mr Porter's Report.'[116] The referees made a recommendation regarding whether it should be read at an ordinary meeting and then whether it should be published in the *JSSL*, both of which were required in Rawson's system.[117] Two things are worth noting. As Porter mentioned, the reviewer was able to know the identity of the author of the paper he perused, and thus, the review process obviously was not double blind. Also, the fact that the second referee read Porter's report before writing his own report suggests that the review was not conducted independently.

3-2-2. Financial Basis of the *JSSL*

The SSL launched the *JSSL* and maintained it during the 1840s when, as I have discussed in Chapter One, the SSL claimed that it was suffering from financial difficulties and had to reduce expenditures on original surveys. Interestingly, the financial difficulties in the 1840s originated from a heavy debt incurred in 1839, for which the creation of the *JSSL* was to be at least partially blamed. The 1840 Auditors' Report shows the details of the large expense in 1839. The SSL sanctioned a total of £270 for the Education Committee and the Working Class Committee to carry out an original survey. At the same time, the

[113] Ibid, 188 (30 March 1837).
[114] 'B2/2 Council Minutes, Oct 1846-Dec 1872' London, Royal Statistical Society Archive, 114 (3 Jan 1852).
[115] No information available for his life. No *ODNB* entry.
[116] 'B2/2 SSL Council Minutes,' 114 (3 Jan 1852).
[117] The *Annals* states that at the time of 1934 papers would be accepted for reading only when they would be accepted for printing too. Royal Statistical Society, *Annals*, 35–36.

SSL spent £280, more than the amount of money spent on those surveys, on the publication of the *JSSL*. The cost included printing costs, the editor's salary, and advertising fees.[118] The Council took several measures to economise on the publication of the *JSSL* in the following years; the journal publication became less frequent, from a monthly to a quarterly in 1840, and the editor's annual salary was reduced from the original £75 to £50 in 1850 and, then, was totally abolished in 1852.[119] After this economisation, according to the 1853 SSL Council Report, the SSL still spent as much as £360 on the printing, advertising, and delivering the *JSSL*, even though a part of the cost was compensated by its sales to the public.[120]

It is important to note that the Council could have sacrificed the *JSSL* to continue original inquiries, as it did with respect to the *TSSL* in 1837. The SSL consciously chose not to do so. The SSL's decision to maintain periodicals makes an interesting contrast with other associations that promoted social sciences in the same period. While the MSS, the SSL's provincial counterpart, conducted social surveys and published survey results, it did not regularly publish its *Transactions of the Manchester Statistical Society* until 1853.[121] Similarly, the Political Economy Club, founded in 1821 to promote the science of political economy, had no regular publication available for the public.

Interestingly, it was apparently important for the SSL to have its own outlet, as it even rejected the idea of publishing its proceedings elsewhere. In November 1835, the Royal Agricultural Society contacted the SSL to propose a joint application for a room in Somerset House, which the SSL declined, instead making an unsuccessful application independently.[122] The next month, the Royal Agricultural Society brought another proposal and offered to publish the SSL's proceedings in its journal, the *Quarterly Journal of Agriculture*. Again, the SSL declined the offer while sending a copy of the

[118] It consists of the following items: £196 11s for 'Messrs. Knight for Journal 2 quarters, including 1 for 1838'; 'Editor of Journal:2 quarters'; and 'Advertising the Journal.' £165 for 'Messrs. Clowes for printing the Journal, three quarters of 1839'. £18 15s for 'Editor of the Journal, one quarter'. 'Sixth Annual Report of the Council of the Statistical Society of London,' *Journal of the Statistical Society of London* 3:1 (1840), 13.
[119] Royal Statistical Society, *Annals*, 58.
[120] 'Nineteenth Anniversary Meeting of the Statistical Society,' *Journal of the Statistical Society of London* 16:2 (1853), 102.
[121] The Manchester Statistical Society circulated annual reports among its members from the establishment, but it stopped this practice after 1839/1840 session. Thomas Southcliffe Ashton, *Economic and Social Investigations in Manchester, 1833-1933 : A Centenary History of the Manchester Statistical Society*, re (Hassocks: Harvester Press, 1977), 34.
[122] 'B2/1 SSL Council Minutes,' 71 (27 Nov 1835). The financial burden caused by rent had been a constant issue for the SSL. For further discussion on this issue, see Chapter Four of my thesis.

PSSL as a token of gratitude.[123] Note that the cost of printing the *PSSL* was not negligible for the SSL; it became an issue two years later when some issues of the *PSSL* went out of print.[124] On 17 November 1837, Porter proposed forming a committee to consider the expediency of reprinting the early numbers of the *PSSL*. The *PSSL* was originally intended to circulate among fellows, but this committee considered the matter 'with a view to selling the whole to the public', probably intending to lighten the financial burden of reprinting.[125] The committee included Porter, Rawson, Charles Knight, and Charles Hope Maclean. With the committee's recommendation, the Council decided to print 250 copies of the first five issues of the *PSSL*. The committee reconsidered the idea of publishing its proceedings in an external medium, since it saw this 'as desirable, on the score of economy'.[126] The Council entertained the possibility of substituting the *PSSL* with *The Statistical Journal and Record of Useful Knowledge*, commonly known as the *Statistical Journal* at the time. The *Statistical Journal* was managed by Charles Ross[127] and previously had no relation to the SSL. The Council considered publishing proceedings in the *Statistical Journal* on the condition that the SSL would receive 'a sufficient number of copies for distribution to the members, paying for the same the expense of paper and press work'.[128] The SSL contacted Ross to discuss the plan, but it somehow abandoned the idea by the end of 1837.[129]

After reviewing these possibilities, the SSL finally decided to create the *JSSL*. The SSL formed a one-year contract with Knight with the terms that he would 'take upon himself the whole expense and risk of the publication, including the salary of the Editor' while the Council would take from him 'five hundred copies at the rate of one shilling for Copy, the price to the public being one shilling and sixpence'.[130] Knight further offered that his company would 'share with the Society any profit that in future might accrue from its sale', if the *JSSL* became remunerative.[131] Under this arrangement, the Council assured the fellows that, even in the worst-case scenario, the expense would not exceed £300.[132] This arrangement with Knight's company did not last long, as he declined to renew the

[123] Ibid, 74 (18 Dec 1835).
[124] Ibid, 160 (3 Nov 1837).
[125] Ibid, 162 (17 Nov 1837).
[126] Ibid, 163–164 (1 Dec 1837).
[127] There is no *ODBN* entry for him.
[128] 'B2/1 SSL Council Minutes,' 163–164 (1 Dec 1837).
[129] Ibid, 170 (29 Dec 1837).
[130] Ibid, 187–88 (30 Mar 1838).
[131] 'Fifth Annual Report of the Council of the Statistical Society of London,' *Journal of the Statistical Society of London* 2:3 (1839), 132.
[132] Ibid, 132.

contract when it expired. The SSL managed to find a printer, William Clowes & Sons, and kept the *JSSL* going.[133] The maintenance of the *JSSL* was clearly still an issue in the 1850s, as the then SSL president, the second Earl of Harrowby,[134] claimed in 1855 that there were voices demanding the *JSSL* be suspended due to unstable financial conditions. The Earl of Harrowby passionately defended the *JSSL* and insisted that 'whatever might be sacrificed, that [the *JSSL*] should be retained'.[135]

3-2-3. Rationale for the Publication of the *JSSL*

Why the SSL maintained the costly *JSSL* at all is a question that needs to be answered. While the SSL had Prince Albert as a patron since 1841, it received no financial support from the British monarchy or the British government.[136] The SSL was a voluntary association that consisted of private individuals, and its financial basis was essentially based on the collection of subscriptions from its fellows. The Council had to be accountable for its use of communal funds. As the publication of the *JSSL* incurred a large expense, the Council had to show the *JSSL*'s relevance to the SSL's scientific mission. The *JSSL* tried to meet this need by aligning itself with the SSL's original purpose: the collection of social facts. The paper titled 'Introduction' in the very first volume of the *JSSL* published in 1838 explained that the *JSSL* was 'devoted to the collection and comparison of Facts which illustrate the condition of mankind, and tend to develop the principles by which the progress of society is determined'.[137] Similarly, the 1839 SSL Council Report argued that the *JSSL* was established in order to fulfil one of the SSL's original purposes: the collection of existing facts. The SSL was established 'to condense, arrange, and publish those [facts] already existing, but either unpublished or published only in a diffuse or expensive form, or in foreign languages', as well as for the collection of new facts.[138] To this end, the Council envisioned that provincial statistical societies would adopt the *JSSL* 'as the channel of their publications' and that the *JSSL* would receive information 'respecting the existence of statistical records and documents not

[133] '1840 SSL Council Report,' 10. *Annals* suggests that Knight kept the publication of the JSSL until 1842, but it contradicts with the 1840 Council Report. Royal Statistical Society, *Annals*, 57.
[134] Dudley Ryder, also known as the Earl of Harrowby and Viscount Sandon, was three-time president of the SSL in 1840–1842, 1849–1851, and 1855–1857. For his *ODNB* entry, Matthew, H. C. G. 2004 'Ryder, Dudley, second earl of Harrowby (1798–1882), politician.' *Oxford Dictionary of National Biography.* [accessed on 12 Oct. 2018]
[135] 'Twenty-First Anniversary Meeting of the Statistical Society,' *Journal of the Statistical Society of London* 18:2 (1855), 101 [] is inserted for clarification.
[136] 'Seventh Annual Report of the Council of the Statistical Society of London,' *Journal of the Statistical Society of London* 4:1 (1841), 69.
[137] 'Introduction,' *Journal of the Statistical Society of London* 1:1 (1838), 1.
[138] '1839 SSL Council Report,' 131.

generally known' and the transmission of all reports of public institutions that contained numerical facts relating to social interests.[139]

The *JSSL* was meant to be a storehouse of existing data. This idea helps us understand better the SSL's policy regarding the exclusion of opinions, for which the SSL received severe criticism from its contemporaries. In April 1838, John Robertson published a highly critical review of the *TSSL* in the *Westminster Review* and argued that the exclusion of opinions was impossible or utterly meaningless because every science needed theories.[140] The 1840 Council Report of the SSL was organised to combat such a 'misconception' of statistics. The Council Report reviewed the role of opinions in the SSL and recounted that 'the first Prospectus of the Society announced its intention carefully to exclude all "opinions" from its publications'.[141] Notice that in this restatement of the SSL's policy, the report dropped the word 'the transactions', which was found in the Prospectus and which may have been interpreted as meetings and other SSL business. This slight change made it clear that the exclusion of opinions had to be seen specifically in relation to its publications. The report continued that the rule was introduced 'not, assuredly, with the view of discouraging the proper use of a priori reasoning or of hypothesis' but simply 'for the purpose of devoting its publications to facts, and not to systems'.[142] Then the report drew an important distinction between the role of individuals and scientific association. The report agreed that the use of '[h]ypothesis and conjecture' on the side of individuals was necessary to pursue scientific investigation.[143] However, such preconceived assumptions needed full examination through observation and experiment: '[I]t is the results of such observation and experiment which it is the main purpose of scientific association to call forth and register.'[144] The *JSSL* was the place where such results of observations were to be registered.

The report further elucidated the relationship between theory and facts. The importance of 'hypothesis and conjecture' is indisputable since, the report claimed, they would 'point out the direction in which observation will most probably be fertile in discovering truth, demonstrating error, or striking out new paths of investigation'.[145] The SSL's exclusion of opinions did not contradict its confinement to the collection of facts because, the SSL

[139] 'Ibid, 132.
[140] Robertson, 'Statistical Society of London Exclusion of Opinions.'
[141] '1840 SSL Council Report,' 6.
[142] Ibid, 6.
[143] Ibid, 6.
[144] Ibid, 6.
[145] Ibid, 6.

suggested, individuals and the SSL played different roles in regard to the development of statistics:

> The facts must have been sought on some theory, of which they may prove the fallacy or the truth. Labourers in the field of science must, like all other labourers, have a prospect of reward; and this reward is the advancement of some definite branch of human knowledge and power. Scientific societies, however, possess no theories in their corporate capacity. They do not vote upon systems, and decide the truth by majorities, but simply open the way for its demonstration by facts.[146]

The report further illustrated the SSL's role as a scientific society. It maintained that one of the leading objects of an association for scientific purposes was to 'provide a store of existing information on the subjects under examination' as well as 'to be a centre of intelligence and encouragement for the exertions of individuals' so that any labour would not be wasted in the collection of already-known information and such collected information would not be ignored due to a lack of attention.[147] 'Perhaps', the Council continued, 'its greatest value is shown in providing an arena for the efforts of individuals, in which the meritorious will receive the rewards most gratifying to the generosity of mind which prompted their exertion.'[148] As I have pointed out in Chapter One, the 1840 Council Report shifted its main role from the execution of original surveys to the guidance of such inquiries, leaving the collection of new facts to governmental offices and enthusiastic individuals. Similarly, the SSL called for individuals to bring forth existing statistical facts in their possession to the SSL so that the SSL could become the storehouse of existing statistical information. In addition to the monthly meetings, the *JSSL* offered an avenue where individuals could share such information with others. The SSL justified the large expenditure because the *JSSL* was to meet one of the fundamental objectives of the SSL.

In passing, it is interesting to note the role of 'theory' in data collection, although the tension between theory and data is extremely important. When Mackenzie developed his idea of the SSL as being a depot of statistical data, he claimed that the SSL had no business maintaining or disputing 'general theories'. However, he saw that historians, political economists, statesmen, and even 'theoretic reasoners' could help statists decide what would be worthy of preservation or how facts should be arranged.[149] Similarly, Lord

[146] Ibid, 7.
[147] Ibid, 8.
[148] Ibid, 8.
[149] Holt Mackenzie, 'Observations on the Means of Collecting Information on Various Points of Statistics,

Overstone[150] expressed the need for a guiding principle for data collection in 1851. Overstone observed two dangers that could destroy the SSL's fact-gathering project. First, he feared that the SSL's unusual exclusion of theoretical views could fail to stimulate interest among fellows, thus causing the mission to be aborted. The other danger was the mindless accumulation of facts without any care to 'the mode of accumulating facts, and to the purposes for which they are to be used'.[151] There was the danger that the SSL would proceed 'like mere children accumulating pebbles on the sea shore, and heaping them up into one useless mass'.[152] Overstone argued that the SSL's collection of facts must be orderly and based on sound principles 'more like the collections of the mineralogist and the geologist'.[153] For that reason, he claimed that the SSL had to proceed 'with a view to an ultimate purpose'.[154]

3-3. Statistical Library

The SSL portrayed itself as the repository of statistical information. In this context, its library also deserves attention. Alongside the *JSSL*, a statistical library was an important facility for the SSL, in terms of the collection of existing facts. The SSL's Prospectus claimed that building a statistical library was 'one prominent object of the Society'.[155] Following this plan, the Council appointed the Library Committee to make a list of standard statistical works that would be added to the collection of the SSL library.[156] In 1835, the Council provided a special grant of £100 to the Library Committee.[157] The Council also received both solicited and unsolicited donations from individuals, scientific associations, and public institutions that formed the basis for the library collection. However, the Council was dissatisfied with its collection. The 1837 Council Report lamented that 'the income of the Society is at present by no means adequate to the collection of a good statistical Library; an object of high importance to its efficacy.'[158]

Explanatory of a Proposition for the Appointment of a Committee to Consider the Expediency of Opening Books for the Contemporary Record of Various Statistical Facts, and to Prepare the Forms in Which Such Books Shall Be Kept,' *Proceedings of the Statistical Society of London* 1:6 (1836), 162.

[150] For Overstone's biography, see Introduction footnote 78.

[151] 'Seventeenth Annual Meeting of the Statistical Society of London,' *Journal of the Statistical Society of London* 14:2 (1851), 103.

[152] Ibid, 103.

[153] Ibid, 104.

[154] Ibid, 104.

[155] 'Prospectus of the Statistical Society of London,' 495.

[156] '1835 SSL Council Report', 33.

[157] 'Second Council Report, March 15, 1836 in A1/1 Reports of Council & Lists of Fellows, 1834-1853' 1836, Royal Statistical Society Archive, 7.

[158] 'Third Council Report, March 15, 1837 in A1/1 Reports of Council & Lists of Fellows, 1834-1853' 1837, Royal Statistical Society Archive, 11.

The SSL library also posed the problem of space to accommodate the ever-increasing number of books. Originally, the SSL did not have a place of its own and rented a room for meeting within the Royal Society of Literature. In the first Council Report in 1835, the SSL Council expressed a desire to have a more spacious room, although it did not see any immediate necessity to acquire one.[159] In 1836, the SSL requested the Treasury for a room in Somerset House, which housed scientific societies and government offices, such as the Royal Society since 1780 and the General Register Office since 1837.[160] However, the SSL's application was rejected.[161] In 1842, the Council began to discuss a realistic plan of renting its own room but faced the issue of high rent, which was 'so far beyond the means of the Society, as to put a stop to every negotiation'.[162] The Council Report hoped that the SSL would secure an opening in the 'excellent accommodation at a moderate rent under the Crown', which resulted in another failure.[163] In 1843, the Council decided to rent its own place on 11 Regent Street in 1843 and, then, 12 St James's Square in 1845–46, where the SSL stayed until 1874. The annual cost of the original meeting place at the Royal Society of Literature was £105. The rent significantly increased after the removals. The SSL paid £200 for the accommodation on Regent Street and £150 on St James's Square, in addition to moving costs. The importance of this move should be understood in relation to the SSL's suspension of original inquiries for financial difficulties.[164] Accommodation remained an issue for the SSL and, as I will discuss in Chapter Four in more detail, prompted the SSL to propose the erection of the 'Scientific Societies' House' that would accommodate the SSL and other scientific societies in London in the 1870s.

The SSL saw two benefits to having a spacious accommodation: the improvement of the meeting place and the completion of a statistical library, both of which were considered to serve the SSL's scientific mission. The Council drew attention to the importance of the library in its 1838 Council Report, in which it noted that increasing numbers of fellows were visiting the 'Society's Rooms, for reference to books and other documents, and

[159] '1835 SSL Council Report', 32.
[160] For the role of Somerset House in Victorian statistics, see Edward Higgs, *Life, Death and Statistics: Civil Registration, Censuses and the Work of the General Register Office, 1836-1952*, Local Population Studies Supplement (Hatfield: Local Population Studies, 2004), 47–49.
[161] The removal of the Royal Academy to Trafalgar Square made a vacancy. '1836 SSL Council Report,' 6–7.
[162] 'Eight Annual Report of the Council of the Statistical Society of London, Session 1841-42,' *Journal of the Statistical Society of London* 5:1 (1842), 87.
[163] Ibid, 87.
[164] Ibid, 86–87.

especially for the purpose of enquiring how, where, and of whom, particular Statistical information can be obtained'.[165] In an unsuccessful attempt to rent a room from the Crown for a reasonable price in 1842, the Council stated its hope that the SSL could enlarge and complete the library 'for purposes of statistical reference'.[166] The Council also argued that a spacious room would increase the number of fellows participating in monthly meetings, where they could share facts with others. Better accommodation would provide a physical basis on which to make the SSL 'a national centre for the collection of facts determining the condition and prospects of society' and for advancing 'moral science'.[167] The Council Report further argued how the better library and meeting room would serve the SSL's scientific mission:

> To make the Society the depository of all that is known on the subject of its investigations, to point out unexplored fields of observation, and encourage and guide the labourer prepared to enter upon them; to afford every facility to the adducing of new facts; and to apply every stimulus to their production, are the purposes to which the Council are most desirous of directing their efforts. In lieu, therefore, of expending further sums upon the collection of new data, which to give them value must be collected on a scale demanding rather the funds of a Government or of a principal [municipal][168] body than the limited revenue which is placed at their disposal, they have husbanded the resources of the Society with a view for the present to the improvement of its library, and of its place of meeting.[169]

The SSL declared that it would leave the collection of new data to governmental and public bodies. Instead, the SSL saw its mission as being to provide access to both existing and new facts through the maintenance of a library and meeting place.[170] The Council made a similar claim the following year. Since the original data was provided by public departments and philanthropic individuals, the SSL continued to economise its expenditure on the collection of original data and to pursue 'their design to make the Society the depository of all the augmenting masses of statistical information'.[171]

In the following year, the Council accounted for a large expense of almost £120 for the relocation to a new room on Regent Street.[172] In a circular issued to defend the Council's

[165] '1838 Council Report,' 7.
[166] '1842 SSL Council Report,' 87.
[167] Ibid, 87.
[168] Corrected in an errata. See, 'Errata: Eight Annual Report of the Council of the Statistical Society of London, Session 1841-42,' *Journal of the Statistical Society of London* 5:1 (1842): iv.
[169] '1842 SSL Council Report,' 87–88.
[170] 'Ninth Annual Report of the Council of the Statistical Society of London. Session, 1842-3,' *Journal of the Statistical Society of London* 6:2 (1843), 90.
[171] Ibid, 90.
[172] The Council claimed the increase in rent was as low as £50 because the new rent included salary for

decision, the Council reminded the fellows that the Prospectus claimed the 'condensation, arrangement and publication of those already existing' had equal usefulness to the collection of original statistical materials and that completing a statistical library was one of the original objectives.[173] Citing these objectives, the Council argued for the importance of holding ordinary meetings and maintaining the *JSSL* and the statistical library:

> The resources of the Society were, in the first instance, chiefly devoted, under the direction of its Committees, to the collection of new statistical information, and to this great purpose a part of its funds is still appropriated. Its monthly meetings have cultivated among its Fellows an active spirit of investigation, and brought out the valuable results of much individual labour. Its Journal has fulfilled the purpose of condensation and publication; and the valuable books and papers which have already been collected form a library of facts of no mean utility.[174]

The Council did not give up original surveys, but it clearly favoured the collection of existing facts. The Council presented to its fellows that the institutionalisation of regular meetings, the library, and the *JSSL* all served this purpose.

The SSL advertised the importance of the library and painted it as an important function that the SSL offered to those who were interested in statistics. When Prince Albert gifted a 'beautiful illuminated sheet' containing Marc d'Espine's 'Tableau Général des Décès du Canton de Genève, pendant l'année 1842' to the SSL library, the Council described its library as 'a central depository of the evidence on which social science can alone be safely based'.[175]

The SSL's dream of a perfect statistical library, however, should not be confused with the reality. The Council was never satisfied with the state of the library and repeatedly urged the need for improvement. Although the SSL hoped to store every statistical piece of evidence and every authoritative book in every field of science, in 1850, the SSL found the library shelves 'insufficiently furnished'.[176] The Council hoped that an increase in subscriptions and a reduction in the fixed expenditure, such as the editor's and assistant

servants (£26), which was charged separately in the previous accommodation and a new law lifted a part of tax burden from scientific societies including the Statistical Society. 'Tenth Annual Report of the Council of the Statistical Society of London,' *Journal of the Statistical Society of London* 7:2 (844), 97.

[173] Ibid, 98.

[174] Ibid, 98.

[175] Ibid, 101.

[176] 'Sixteenth Annual Report of the Statistical Society of London Session 1849-50,' *Journal of the Statistical Society of London* 13:2 (1850), 98–99.

secretary's salaries, would provide additional funds to improve the library.[177] Yet, in the following year, the second Earl of Harrowby observed that the state of the library was 'one very important deficiency in our Institution'.[178] To his eye, the shelves were not as furnished as they should have been. The SSL library, he claimed, had to be a place where one could be sure to find something useful in regard to anything concerning statistical inquiry.[179] He hoped that the newly elected council would adopt some means 'to assume the position as *a centre of statistical information* which devolves upon us'.[180] In 1853, the SSL agreed to let the Institute of Actuaries use their room for an annual price of £100, which would be invested in the improvement of the library.[181] In 1854, the Council referred to its improving financial situation and promised that, once it cleared its liability, it would devote its funds 'to the extension and improvement of the library, to original inquiries, or to other purposes of importance'.[182]

4. Gleaning Facts as a Scientific Practice

4-1. The *JSSL* and the Repository of Facts for Posterity

The need for the collection of existing facts, one of the SSL's scientific missions, drove the SSL to institute the *JSSL*. This mission also shaped the style of writing articles for the *JSSL* and the manner in which they were read. Although the SSL Council reports did not extensively discuss the exact nature of 'arranging, condensing, and publishing much that already exists',[183] a few papers in the SSL's publication discussed systems for recording facts. The examination of these papers helps us make sense of the textual practices in the SSL.

The earliest example addressing the collection of existing facts is William Jacob's 'Observations and Suggestions Respecting the Collection, Concentration, and Diffusion of Statistical Knowledge Regarding the State of the Nation'.[184] Apparently, the paper was originally written and circulated in 1832 within the Board of Trade, where Jacob worked

[177] Ibid, 97.
[178] '1851 SSL Council Report,' 106.
[179] Ibid, 106.
[180] Ibid, 106. Emphasis in original.
[181] '1853 SSL Council Report,' 100.
[182] 'Twentieth Anniversary Meeting of the Statistical Society,' *Journal of the Statistical Society of London* 17:2 (1854), 98.
[183] 'Prospectus of the Statistical Society of London,' 493.
[184] Jacob, 'Collection, Concentration, and Diffusion of Statistical Knowledge: One'; Jacob, 'Collection, Concentration, and Diffusion of Statistical Knowledge: Two'; William Jacob, 'Observation and Suggestions Respecting the Collection, Concentration, and Diffusion of Statistical Knowledge Regarding the State of the United Kingdom,' *Transactions of the Statistical Society of London*, 1837, 1–25.

as the comptroller of corn returns, proposing the creation of a new department specialising in the management of statistical information.[185] The SDBT was established in 1833, but Jacob saw it as 'too limited in its extent'.[186] Jacob repeated his point by reading his paper at the SSL's ordinary meetings in December 1834 and January 1835. While the abstract of his paper was already published in the *PSSL*, the SSL decided to include Jacob's full paper in the *TSSL* more than two years after its original reading, which suggests that it received reasonable attention from the members of the SSL.

In his paper, Jacob observed that the government needed to be accountable for its actions and it had become 'a right of the public to receive every kind of information which can lead to a correct judgment of their capacity, assiduity, and integrity'.[187] However, Jacob further observed that the statistical facts about public affairs were scant and even those collected by parliamentary committees were difficult to access because they were 'so mingled with a vast mass of irrelevant, or unimportant, or tiresome details, and is scattered through such a number of ponderous folio volumes, that it has presented an appalling labour to all but the most indefatigable inquirers'.[188] To resolve the issue, Jacob argued the need for new machinery to 'accumulate, classify, and simplify ascertained facts—to make them easy of acquisition and comprehension', and he recommended the formation of a new department under the Board of Trade for this purpose.[189] Jacob then made propositions to improve the quality of governmental reports and to extend governmental information gathering.

Jacob's paper inspired Holt Mackenzie to address the issue of data accumulation.[190] Jacob assumed that the government was responsible for, and capable of, collecting, accumulating, and circulating statistical information. He saw that the main issues lay in the limited extent of the government's information gathering and the lack of easy access to already-collected facts. Jacob expected the government to deal with both issues. Although Mackenzie agreed with Jacob's basic view on the scarcity of statistical facts, Mackenzie diverged from Jacob regarding the mode of solution and the actor who should take responsibility for this. While Mackenzie was aware that, unlike the government, the SSL did not have extensive powers of conducting original investigation, he suggested that

185 Cullen, *The Statistical Movement*, 19–20.
186 Jacob, 'Collection, Concentration, and Diffusion of Statistical Knowledge: Three,' 2.
187 Ibid, 1.
188 Ibid, 1.
189 Ibid, 2.
190 Mackenzie, 'Books for the Contemporary Record,' 153.

the SSL was still capable of accumulating statistical facts. He urged the SSL members to turn their attention from uncultivated fields of investigation that only government offices could pursue to plentiful facts easily 'found at our feet, and in the ordinary paths of life', such as wholesale and retail prices of goods.[191] Mackenzie saw no need for extraordinary labour to gather such mundane information. The only issue was, Mackenzie observed, that it was short-lived and could be irretrievably lost without systematic recording. He argued that every statistical inquirer who investigated past ages would know 'the difficulty of getting, fully and accurately, for any considerable series of years, things which at the time of their occurrence, were known to all the world'.[192] Even when particulars were preserved, 'they are recorded without method, scattered through a variety of works, and sometimes received without examination', which caused difficulties in accessing and verifying facts.[193] The SSL, Mackenzie claimed, could have resolved these problems by offering systematic recording.

Another notable difference between Jacob and Mackenzie was the intended audience of statistical information. While Jacob was mainly concerned with the accessibility of information to the public and administrators in his own time, Mackenzie was more interested in preserving reliable records for posterity, in the distant future, suggesting that the accumulation of such data, as he envisioned, would exhibit 'the condition of the human race or of any of its great families, in the different stages of their progress, rise or decline'.[194] Mackenzie urged the SSL to take the initiative for the recording of statistical information. The SSL should take pride, he argued, in being an everlasting store of authentic statistical facts, and should realise 'the probable wishes of the men of the year two thousand'.[195] To this end, Mackenzie suggested opening a set of registers in cooperation with individuals and other societies that would record statistical information and its sources.[196] He noted the need for reporting the minute circumstances of recording, such as the specification of units, to allow a fair comparison with other records.[197] He was optimistic that members would provide statistical materials if they knew that 'the Society was prepared systematically to digest and arrange what they should be the means of furnishing'.[198] To illustrate his point, he enumerated items that would be recorded,

[191] Ibid, 153–154.
[192] Ibid, 154.
[193] Ibid, 154.
[194] Ibid, 154.
[195] Ibid, 155–156.
[196] Ibid, 156.
[197] Ibid, 159.
[198] Ibid, 157–158.

including, among others, average wage, cost of education, time of transport, and meteorological observations. While Mackenzie saw the act of collection as relatively easy, he expected difficulties to arise from 'the questions of selection, condensation and arrangement' that would 'require very deliberate consideration'.[199] He left these matters to the further consideration of his fellow members because his paper did not intend to provide a detailed plan of registers, but he drew the members' attention to the importance of such systematic recording.[200]

Mackenzie actually attempted to realise his idea by introducing machinery for the recording of statistical facts into the SSL. On 29 April 1836, a few weeks before the reading of his paper at an ordinary meeting, Mackenzie proposed a motion for the formation of a special committee to 'consider the expediency of opening Books for the contemporary record of various Statistical facts; and to prepare the forms in which such Books should be kept'.[201] His motion was passed, and the Council appointed the committee.[202]

Mackenzie's register books project apparently failed, as no materials produced by this system is available today. However, Mackenzie's idea that the SSL had to serve an audience across time helps us understand the SSL's consideration of readers of the future. The 1841 Council Report asked the fellows to donate to the library copies of statistical works and 'any fugitive records of prices, wages, &c., &c., which they have an opportunity of collecting; for these, which may appear of little value at present, will become useful as means of comparison in future years, and may supply to another generation of Statists the information which we often desire, but seek in vain, with reference to the past'.[203] Similarly, in 1855, the second Earl of Harrowby employed this idea in defence of the *JSSL* and claimed that the *JSSL* was 'the great link that bound together the present and the absent Members of the Society, and would prove eminently useful to the moralists and legislators of future ages. By means of that Journal the Society was sending out from day to day very valuable records, of which posterity would reap the fruit.'[204]

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[199] Ibid, 156.
[200] Ibid, 157.
[201] 'B2/1 SSL Council Minutes,' 93 (22 April 1836).
[202] Ibid, 95 (29 April 1836). The committee consisted of Thomas Took, S. Jones Lloyd, W. J. Blake, and Dr. Lister.
[203] '1841 SSL Council Report,' 71–72.
[204] ' 1855 SSL Council Report,' 101.

4-2. The *JSSL* and a Communal Commonplace Book

In 1841, Guy published a peculiar paper on the use of commonplace books in statistics titled 'On the Best Method of Collecting and Arranging Facts, with a Proposed New Plan of Common-Place Book'.[205] Guy discussed the system of note-taking for observational sciences as a way of preserving facts. Since his system was meant to collect and arrange existing facts, it sheds new light on the act of writing, as well as reading, in the SSL.

In his 1841 paper, Guy pointed out that scientific pursuits involve learning what is already known.[206] He emphasised the importance of searching and analysing the facts 'collected by those who have preceded us' as opposed to making new observations and experiments in expanding the boundaries of knowledge because, without the examination of existing facts, one might end up wasting one's labour in making observations that have already been made.[207] The learning of others is essential, Guy claimed, particularly for observational science, where objects of research are so diverse and complex that one cannot make extensive direct observations. He illustrated his point by examining medical science, in which he had a professional interest and expertise as a professor at King's College London. Guy argued that medicine was the most populated field in science and that men of science made and reported a vast amount of observations in this area.[208] The issue was, as Guy observed, that medical observers often produced detailed but 'isolated' observations which were either very curious in their own right or wrongly seen as 'wonder' by inexperienced observers.[209] The lack of a well-digested collection of facts ended up producing medical books that were filled with 'detached cases, hasty conclusions, and crude hypotheses'.[210]

Guy pointed out the need to integrate isolated facts to form the basis of a wide generalisation. Although he was critical of the state of medical publications, he acknowledged that medical works could form a 'rich mine' for medical science if the materials in these books were rendered available for scientific pursuit 'by bringing into

[205] William Augustus Guy, 'On the Best Method of Collecting and Arranging Facts, with a Proposed New Plan of Common-Place Book,' *Journal of the Statistical Society of London* 3:4 (1841): 353–66.
[206] Ibid, 353.
[207] Ibid, 353.
[208] For library medicine in the nineteenth century, see J. Andrew Mendelsohn, 'Empiricism in the Library: Medicine's Case History,' in *Science in the Archives: Pasts, Presents, Futures*, ed. Lorraine Daston (Chicago: IL; London: University of Chicago Press, 2017), 85–109.
[209] Guy, 'The Best Method of Collecting and Arranging Facts,' 353.
[210] Ibid, 353.

use accurate methods of arrangement, and powerful instruments of analysis'.[211] Guy's system of scientific note-taking was intended to meet this need and to improve the situation of medical science. He further argued that statisticians could benefit from his system of note-taking because '*social* science which it is the great object of the Statistical Society to promote' often has to 'seek in the imperfect records of the past for information'.[212]

In Guy's eyes, the issue was not the lack of facts but their dispersion across books. A simple solution was collecting existing facts from articles and books by reading them. Guy saw no difficulty in gleaning facts from published sources, but he was concerned about the issue of keeping those isolated facts. He questioned memory as a reliable place to store those facts and recommended taking notes instead.[213] Simply keeping entries in a book appeared to be unpractical because, he observed, finding a particular entry becomes difficult and time-consuming as the collection of facts swells. Guy turned to John Locke's famous method of the commonplace book.[214] While Locke's commonplace book provides an index for easy reference, Guy pointed out the inconvenience that would arise from the lack of thematic arrangement. Locke's rough alphabetical index system, which has flexible heads as opposed to fixed heads, lists different objects in the same space just because they share the same initial and a first vowel.[215] What Guy found most troubling is the fact that the same topic is 'scattered through a succession of pages' and a considerable amount of time is required for just reviewing relevant items.[216] A simple solution may be using one book for each topic. However, Guy objected to such an arrangement, as he deemed it feasible only when the number of subjects were few.[217] Instead, he recommended the use of separate cards of half 'large letter-paper' size, kept in portfolios with corresponding subject names.[218] Portfolios would then be kept in a box or drawer until the collection became large enough to form a book.[219] Guy insisted that the use of loose cards and separate portfolios would be particularly useful when one cannot expect the future development of research. To illustrate his point, he presented an

[211] Ibid, 353.
[212] Ibid, 354. Emphasis in original.
[213] Ibid, 354–355.
[214] Ibid, 355. For Locke's commonplace book, see Richard Yeo, 'John Locke's 'New Method' of Commonplacing: Managing Memory and Information,' *Eighteenth-Century Thought* 2 (2004): 1–38; Michael Stolberg, 'John Locke's 'New Method of Making Common-Place-Books': Tradition, Innovation and Epistemic Effects,' *Early Science and Medicine* 19:5 (2014): 448–70.
[215] Guy, 'The Best Method of Collecting and Arranging Facts,' 355.
[216] Ibid, 356.
[217] Ibid, 357.
[218] Ibid, 357.
[219] Ibid, 357.

example of his own note on 'Pulse'.[220] Initially, he kept all the facts related to the pulse from his reading in one portfolio. As his collection swelled, he felt the need to create subdivisions, such as 'the effect of posture on the pulse' and 'the diurnal variations' and 'the relation to the respiration to the pulse'. With this example, Guy demonstrated the advantage of the use of cards and portfolios, as its flexibility is convenient in retrospective reorganisation. When materials are sufficiently gathered, they can be turned into a book and kept on the shelf.

Guy insisted that his method of the commonplace book corresponds to the actual process of scientific development, which, as he saw it, starts from an observation of a single fact and proceeds to an accumulation of similar cases. A collection of similar facts is classified into small groups and finally one compares groups of facts.[221] By establishing similarities between the process of note-taking and scientific research, Guy presented taking notes from various sources as a scientific practice. Interestingly, he almost equated the act of note-taking with the act of scientific writing:

> My papers reason for me, for each contains a single proposition illustrated by facts gleaned from books or from observation. If an essay or a book is to be written, it is ready to the hand; if a lecture is to be delivered the materials are already arranged. A few words will connect the detached propositions, and furnish forth a discourse rich in learning or in facts.[222]

Guy's system of commonplacing, I argue, helps us make sense not only of Guy's individual papers published in the *JSSL* but also of the entire *JSSL* project. This is not to argue that fellows of the SSL adopted Guy's system. While the De la Rue. Co. published 'Dr Guy's Common-Place Book' and one SSL fellow, in a paper published in the *JSSL*, actually recommended the use of Guy's method as a 'convenient mode of arranging and preserving' facts, it is unknown how widely this method was adopted among statisticians.[223] My argument is rather to point out that the *JSSL* and Guy's system of note-taking shared the common goal of preserving existing facts. Guy's distinction between original observation and existing observation, and his interest in the latter, matched the SSL's distinction between fresh facts and existing facts and its insistence on

[220] Ibid, 359–360.
[221] Ibid, 361.
[222] Ibid, 360.
[223] For an advertisement of Dr Guy's Common-Place Book, see William A. Guy, *Public Health : A Popular Introduction to Sanitary Science* (London: Henry Renshaw, 1870), 217. James T. Hammick, 'Suggestions for the Collection and Arrangement of Local Statistical Information,' *Journal of the Statistical Society of London* 34:4 (1871), 428.

the equal usefulness of both types of facts. This resemblance sheds new light on some features of the *JSSL*.

Guy's system of note-taking reminds us that the bookish method of collecting and arranging existing facts was common in the *JSSL*. One can find papers written as a summary of information gleaned from books. Guy's own papers on the duration of life among different occupations were clear examples. Other fellows published a digest of publicly available information in the *JSSL*, such as Joseph Fletcher's 'Statistics of the Municipal Institutions of the English Towns' and Porter's examination of the 1841 Census.[224] These may appear to us today as unoriginal works that do not deserve our attention, but the 1843 Council Report actually praised their 'laborious' efforts and encouraged others to follow suit.[225]

An example of a rejection letter dated 1851 collaborates my points. The report, jointly signed by two referees, Thomas Tooke[226] and John Towne Danson,[227] recommended the Council return the paper to the author with thanks. The paper was not fit, the reviewers claimed, for either reading at a meeting or publishing in the *JSSL*, as it neither stated 'any new fact, nor points to any definite reference froms[sic] facts previously known'.[228]

Another feature that deserves attention in Guy's system of note-taking was his devaluation of first-hand observation. Guy reviewed the state of medical science and pointed out the abundance of detailed case records that were produced through direct observation. Although he did not deny the importance of direct observation, he insisted on the risk of drawing conclusions from a limited number of cases as, he claimed, this could lead inexperienced medical practitioners to end up attributing 'wonder' to what they saw. An extensive series of original observations could avoid the danger of premature conclusions, but Guy presented this to be practically impossible, as medical practitioners were too busy to engage themselves in such time-consuming activities. Instead, he offered

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[224] Joseph Fletcher, 'Statistics of the Municipal Institutions of the English Towns,' *Journal of the Statistical Society of London* 5:2 (1842): 97–168. Porter, 'An Examination of Some Facts Obtained at the Recent Enumeration of the Inhabitants of Great Britain, in Continuation of a Paper Read Before the Statistical Society of London, on the 20th December, 1841.'

[225] '1843 SSL Council Report,' 91.

[226] For Took's biographical information, see Introduction footnote 89.

[227] John Towne Danson was an active member of the SSL and published more than ten papers in the *JSSL* in the 1840s and 1850s. According to an obituary published in the *JRSS*, Danson briefly worked for Charles Dickens as an editorial staff member for his financially unsuccessful *Daily News*. For a brief discussion on Danson's understanding of the role of statisticians, see Chapter Five of this thesis. 'John Towne Danson,' *Journal of the Royal Statistical Society* 61:2 (1898): 372–74. The ODNB does not have an entry for him.

[228] 'B2/2 SSL Council Minutes,' 121 (13 Mar 1852).

his bookish method as an alternative, which provides medical practitioners a feasible way to have well-digested facts with limited time. Note that his move effectively questioned the importance often invested in first-hand observation as opposed to second-hand observation. A well-arranged collection of second-hand observations, as Guy saw it, was better than isolated direct observations.

Guy's system of note-taking was a collaborative project in two senses. While he did not exclude his own observation from his recording, he saw gleaning facts from other sources as the central feature of his commonplace books. Moreover, Guy conceived of his commonplace books as potentially communal notebooks as well as personal ones. He argued that, with this method, one could accumulate facts to 'the size of goodly volumes, which, if not published to the world, might form an acceptable bequest to some of our public libraries'.[229] Guy envisaged someone would benefit from his notebooks after his death. He further likened his notebooks to a museum of natural science. While building a museum by 'collecting, preserving, and arranging material objects in illustration of the natural sciences' would require great labour and cost, one could easily build a museum of facts 'arranged with equal accuracy, and, though less showy, not less useful' by following Guy's system of commonplacing.[230] For those who are familiar with the history of the commonplace book, the idea of the communal use of commonplace books may not be surprising. Though the genre of published commonplace books, which was compiled by someone for the use of others, existed at an earlier time, it declined in the seventeenth century.[231] Nonetheless, Guy's system is worth noting, as it is pertinent to understanding the way one was supposed to read the *JSSL*. After reviewing Guy's method of collecting existing facts, the *JSSL* can be seen as a reference work rather than as a collection of argumentative research articles. Edward Henry Stanley,[232] fifteenth Earl of Derby, clearly saw the *JSSL* in this way. At the 1857 annual meeting of the SSL, then-President Stanley proposed a vote of thanks to the retiring president, the second Earl of Harrowby, and congratulated him on the progress that the SSL had made in the past years. Stanley praised the usefulness of the *JSSL* as one of the SSL's achievements:

> The *Journal* of the Society, which is now in the twentieth year of its existence,

[229] Guy, 'The Best Method of Collecting and Arranging Facts,' 361.
[230] Ibid, 361.
[231] For an authoritative work for this genre, see Ann Moss, *Printed Commonplace-Books and the Structuring of Renaissance Thought* (Oxford University Press, 1996).
[232] Edward Henry Stanley was president of the SSL in 1857–1859. For his ODNB entry, see Steele, David. 2008 'Stanley, Edward Henry, fifteenth earl of Derby (1826–1893), politician and diarist.' Oxford Dictionary of National Biography. [accessed on 13 Oct. 2018]

> contains a vast amount of statistical information, and may be called an Encyclopædia of Statistics. For himself, if he [Stanley] had occasion for any statistical information, he could always either find it in the *Journal*, or at least could find references to authentic documents bearing on the point in question. [233]

Stanley described the *JSSL* as an 'Encyclopædia of Statistics' from which he could retrieve concisely summarised facts relevant to a topic of his interest. Although the difference between the notion of a completed encyclopaedia and Guy's ever-expanding portfolios should not be ignored, Stanley's comment corroborates my argument.

Guy's system of note-taking was designed for general use, but he made a claim for its utility for students of statistics. He noted two factors to be included in the case of statistical note-taking: numerical results and the circumstances of individual observations. [234] The former is obvious, but the importance of the latter cannot be emphasised too much. Guy was concerned about confusion arising from the omission of observational methods from records because statistical results on the same topic would not be able to be compared when different methods of observation were employed, about which Mackenzie expressed a similar concern. Guy took the example of 'height' in national armies to illustrate his point. While an army in each country could provide an 'average height', some countries would calculate the 'average height' based on all those who presented themselves for admission to the army and others would do so by reference to soldiers actually admitted to the army. Even within the group of data calculated from admitted soldiers, the issue of different criteria for the admission to the army poses an issue when data is compared. Guy was aware of the difficulty of finding perfectly comparable data. He recommended, as the second-best method, to carefully record statistical results with 'all the known circumstances under which the measurements are made'.[235] Despite the difficulty, Guy managed to be optimistic:

> Nevertheless, in spite of all these discrepancies, the facts in themselves deserve to be recorded, and to be reserved till other facts, in every respect comparable, have been collected. The facts in illustration of this, as of many other subjects, are often found where they are least to be expected; and whether they are written down at the time, or referred to when wanted for immediate use, it will be equally necessary to ascertain and express in writing the exact value of those facts, preparatory to throwing them into the form of a regular treatise.[236]

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[233] 'Twenty-Third Anniversary Meeting of the Statistical Society,' *Journal of the Statistical Society of London* 20:2 (1857), 100. [] inserted for clarification.
[234] Guy, 'The Best Method of Collecting and Arranging Facts,' 362.
[235] Ibid, 362.
[236] Ibid, 362.

Even when the perfect comparison is impossible, one can conduct a tentative comparison between observations at hand, as long as the circumstances were recorded in detail. Such records would also serve as the basis for comparison in the future.

4-3. Publishing 'Unoriginal' Works in the *JSSL*

The idea that the *JSSL* functioned as the place of storage for existing facts was also manifested in how the SSL arranged the journal's layout and organised its information. The 'Miscellaneous' section and 'Index' are worthy of attention in this regard.

The *JSSL* was not a simple extension of the *TSSL*. Its organisation of information makes an interesting contrast; while the *TSSL* was meant to be a collection of independent papers, the *JSSL* included various types of items other than papers that were read at the SSL ordinary meetings—papers read at Section F of the BAAS, reviews of recent statistical publications, extracts from official statistics, excerpts from letters, translations of foreign papers relating to statistics, the proceedings of ordinary meetings, the record of annual meetings, lists of recent statistical publications, and abridgement of Parliament papers. One of the most notable changes that the *JSSL* adopted was the addition of the 'Miscellaneous' section. This section consisted of a mixture of descriptive accounts and figures. Each item was separated by a title, but there was no explanation about the relationship between each item. In some cases, items consisted of statistical tables only, but in other cases, detailed descriptions accompanied the statistical tables. Unlike the independent papers in the *JSSL*, the items in the 'Miscellaneous' section often bore no author's name.[237] It is worth noting that the 'Miscellaneous' section included information excerpted from parliamentary papers, reports from governmental institutions, and social and economic information taken from newspapers—in other words, statistical facts published elsewhere.

Another difference between the *TSSL* and *JSSL* that deserves attention was the introduction of an index at the end of each volume. With this index, one could search for a specific author and find that author's papers and remarks in meetings. For example, a search for 'Porter, G. R. Porter in the index tells the reader the page number of Porter's paper. Moreover, it indexed various topics, such as 'Criminal Statistics' and 'Mortality'.[238] Even items in the 'Miscellaneous' section were indexed. If one were

[237] A notable exception is James Glaisher's meteorological reports from at the Royal Observatory.
[238] 'Index to Vol. 1', *Journal of the Statistical Society of London* 1 (1839), 562, 566.

seeking statistical information about the average prices of corn in the United Kingdom, 'Corn' in the index would give the page number of relevant statistical tables included in the 'Miscellaneous' section.[239] By contrast, the *JSSL*'s table of contents would give no information about individual tables in that section. With the introduction of the index, the *JSSL* functioned as a statistical dictionary.

In addition to each volume's index, there was a series of general indexes that were supposed to cover all the volumes of the *JSSL*. In 1853, the Council authorised the creation of the first General Index, which would cover the first 15 volumes of the *JSSL*.[240] Guy, as one of the honorary secretaries, initially took charge of this enterprise but eventually sought professional help.[241] Benjamin Robert Wheatley,[242] a then famous librarian and bibliographer, carried out the job and completed the JSSL's first General Index in 1854.[243] It set an example for the following general indexes in 1863, 1874, and 1889. Upon the completion of the first General Index, Guy, representing the SSL Council, declared that the index would render the *JSSL* more accessible 'not merely to our own Members but to the public at large'.[244] Wheatley then explained the principle upon which the index was formed. He treated the *JSSL* as 'a storehouse of facts illustrating the condition and progress of society' and designed the index accordingly:[245]

> The object which has been kept in view has been, not only to make the index of the greatest possible use to all who may casually consult it, but also to render it a valuable work of reference to the Statistical Student, in which he may discover as many collateral or cognate facts as possible in illustration of the subject on which he is engaged; and may be assisted in those philosophical generalizations of which the science of Statistics is so peculiarly the foundation.[246]

Wheatley made it clear that he prepared the index for future generations, as well as for his contemporaries. Wheatley anticipated that his index could be criticised for its 'excessive minuteness'.[247] In his defence, he cited the 1841 Council Report, which, as I have already mentioned in relation to Mackenzie's idea, asked the fellows to provide a

[239] Ibid, 561.
[240] '1853 SSL Council Report,' 99–100.
[241] 'B2/2 SSL Council Minutes,' 144 [18 Dec 1852].
[242] For his *ODNB* entry, see Carlyle, E. I. 2004 'Wheatley, Benjamin Robert (1819–1884), bibliographer.' *Oxford Dictionary of National Biography*. [accessed on 13 Oct. 2018]
[243] '1854 SSL Council Report,' 98.
[244] *Journal of the Statistical Society of London General Index to the First Fifteen Volumes* (London: John William Parker & Son, 1854),[iii].
[245] Ibid, v.
[246] Ibid, v.
[247] '1841 SSL Council Report,' 72.

collection of records that, although 'may appear of little value at present, will become useful as means of comparison in future years, and may supply to another generation of Statists the information which we often desire, but seek in vain, with reference to the past'.[248]

In passing, it is worth mentioning that Guy was also interested in a library catalogue. He volunteered the preparation of a classed library catalogue in 1841, the first attempt of this kind, to assist in speedy referencing and to show the inventory of the library.[249] A similar attempt took place in 1844, carried out by Dr Lister.[250] Both of these attempts, however, were unsuccessful and produced nothing. In 1845, an individual called Charles Pearson[251] proposed to the SSL Council that they 'establish a depot, with a competent officer, to supply at a reasonable rate statistical information to persons who from want of leisure, want of access to documents, or other circumstances, are unable to acquire it'. This proposal was rejected due to lack of funding.[252] In 1850, the Council Report argued that, with the rapid accumulation of statistical evidence, the SSL 'should not only render our Library complete as a depository of it, but likewise store it with all the best works which have endeavoured to advance the social sciences, with a distinct and consistent reference to such data; in fact, with every book of authority in each department of those sciences'.[253] The first Library Catalogue was created in 1855[254] and appears to have been continuously updated. The printed version appeared in 1884.

4-4. The *JSSL* after the Dropping of '*Aliis Exterendum*'

My examination of the perceived role of the *JSSL* among the fellows also casts new light on the SSL's symbolic motto *aliis exterendum*. The Council discussed the design of the SSL's seal for the first time on 30 May 1834, and the discussion continued in some of the following meetings.[255] On 25 March 1835, Charles Hope Maclean reported his discussion

[248] Ibid, 71–72.
[249] Ibid, 71–72.
[250] Nathaniel Lister was a medical doctor and an SSL Council member in its early days, but very little is known about him. No *ODNB* entry is listed for him.
[251] Nothing is known about him except his address: 10 Park-Street, Westminster. Statistical Society of London, 'November 20, 1837,' *Proceedings of the Statistical Society of London* 2:12 (1837), 1. No *ODNB* entry.
[252] 'B2/2 SSL Council Minutes,' 427 [8 April 1845].
[253] '1850 SSL Council Report,' 98–99.
[254] '1855 SSL Council Report,' 98–99.
[255] 'B2/1 SSL Council Minutes,' 7, 15, 22, 25 (30 May 1834, 31 October 1834, 14 January 1835, 21 January 1835).

of the seal and motto with 'Mr Gage', who was probably John Gage Rokewode,[256] the director of the Society of Antiquaries at that time.[257] Gage approved a proposed emblematical seal of a 'Wheat Sheaf' with the motto '*Aliis Exterendum*'.[258] On 24 February 1837, the Council ordered the impression of this seal be printed on the front page of the *TSSL*. The *JSSL* followed suit when it replaced the *TSSL* in 1838.

The centenary anniversary volume of the RSS's official history translates the motto as 'to be threshed out by others'.[259] Hilts adopted the same translation in his authoritative paper on this motto and summarised its meaning as being that the SSL was 'simply to gather the facts, leaving it to others to draw whatever conclusions might be warranted'.[260] There are different translations, such as William Cochran's 'let others thresh out' and Schweber's 'for others to harvest'.[261] Barnett claimed that the motto should have been translated as 'to be threshed for others' and could have allowed Victorian statisticians to interpret data. However, even Barnett agreed that Victorian statisticians occupied themselves with the collection of facts because, as he claimed, statisticians 'misunderstood' the motto.[262]

Since historians had invested symbolic importance in the motto, Hilts and Schweber saw the removal of the motto from the SSL's seal in 1857, which coincided with the expansion of Section F's scope from 'Statistics' to 'Economic Science and Statistics' in 1856, as a symbolic turn in the nature of statistics, although they drew different implications from this transformation. While Hilts saw it as the beginning of the dominance of economic statistics in the SSL, Schweber saw it as a marker of the abandonment of the descriptive style of statistics in favour of the 'experimental' one promoted, Schweber claimed, by Newmarch and Guy.[263]

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[256] For his ODNB entry, see Cooper, Thompson. 2009 'Rokewode, John Gage (1786–1842), antiquary.' *Oxford Dictionary of National Biography.* [accessed on 13 Oct. 2018]
[257] 'B2/1 SSL Council Minutes,' 41 (25 Mar 1835).
[258] Ibid, 41 (25 Mar 1835).
[259] Royal Statistical Society, *Annals*, 51.
[260] Hilts, 'Aliis Exterendum,' 21. Victor L. Hilts, *Statist and Statistician* (New York: Arno Press, 1981), 259. Cullen did not provide direct translation but summarised the motto as 'it [the SSL] collected facts the conclusions from which were to be threshed out elsewhere'. Cullen, *The Statistical Movement*, 86.
[261] William G. Cochran, 'Early Development of Techniques in Comparative Experimentation,' in *On the History of Statistics and Probability : Proceedings of a Symposium on the American Mathematical Heritage, to Celebrate the Bicentennial of the United States of America, Held at Southern Methodist University, May 27-29, 1974*, ed. Donald Bruce Owen (New York: Marcel Dekker, 1976), 8. Libby Schweber, *Disciplining Statistics: Demography and Vital Statistics in France and England, 1830-1885*, Politics, History, and Culture (Durham, NC; London: Duke University Press, 2006), 101.
[262] Vic Barnett, 'Aliis Exterendum and Beyond!,' *Radical Statistics* 98 (2009), 69.
[263] Schweber, *Disciplining Statistics*, 121.

It is important to note, however, that the removal of the motto did not end the *JSSL*'s project of functioning as a repository of existing facts. When the *JSSL* marked its twentieth anniversary, Newmarch, then editor, took advantage of this special occasion to reform the *JSSL*'s structure. As well as a newly designed seal, he introduced other changes. The Council Report observed the reform of the *JSSL* but did not go into details regarding the changes and, interestingly, made no reference to the removal of the Latin motto. The report claimed that the introduced changes were 'not intended to be extensive' but made for 'those great ends of clearness and distinctness', which, the report insisted, were 'no mean object with the careful investigator of statistical evidence'.[264] The phrasing suggests the *JSSL* was still seen as a place where one could seek 'statistical evidence' as opposed to analysis.[265] This point is further corroborated by the 1859 Council Report, which highlighted the creation of the 'Quarterly Returns' section, to which statistical information taken from various places was relocated from 'Miscellaneous'. The 1859 Council Report claimed that it had been 'a leading object in the recent numbers of the Journal, to introduce, under the title of Quarterly Returns, carefully prepared and condensed summaries of the more important Monthly Official Tables relating to Imports, Exports, Shipping, Bullion, Poor Relief, &c.; so that the Fellows may possess, in a scientific form, a continuous register of some of the most essential of the data indicative of the progress of the country.'[266]

The 'Quarterly Returns' section was perhaps intended to completely replace the 'Miscellaneous' section because 'Miscellaneous' disappears from the *JSSL* in 1858. However, 'Miscellaneous' resurfaced in 1859 and was divided into subsections with various titles. The new 'Miscellaneous' section included published news relating to statistics and statistical tables from newspapers, private associations, and foreign governments. In 1864, the 'Quarterly Returns' section was divided into three subsections—'England and Wales', 'Scotland', and 'Great Britain'—and by the end of 1864, another subsection was added—'Ireland'. In 1870, 'Quarterly Returns' was renamed 'Periodical Returns'. The 'Periodical Returns' section was published quarterly until the end of 1876. In 1877, it was published only once that year, twice in 1878,[267] and

[264] 'Twenty-Fourth Anniversary Meeting of the Statistical Society. Session 1857-58,' *Journal of the Statistical Society of London* 21:2 (1858), 116.
[265] Ibid, 116.
[266] 'Twenty-Fifth Anniversary Meeting of the Statistical Society,' *Journal of the Statistical Society of London* 22:2 (1859), 204.
[267] 'Periodical Returns' section was printed in the issue one and two while the section was included in 'Miscellaneous' in the issue two.

again just once in 1879. From 1879 onward, the 'Periodical Returns' section was printed annually, and it became almost constant in both appearance and size, amounting to 24 pages.

It should be noted that Newmarch himself emphasised the importance of the creation of the 'Quarterly Returns'. In 1862, Newmarch announced his resignation as *JSSL* editor and honorary secretary, as he started a new demanding job in a London bank. In his letter to the Council, which was later published in the JSSL, Newmarch extensively discussed the role of the *JSSL* and the improvements that he would expect from the future editor and the Council members. Newmarch ambitiously claimed that the statisticians' past labour 'should begin to bear fruit by enabling us to generalize many of our conclusions, and obtain a clear perception of the fundamental principles which should guide our researches.'[268] To the goal of generalisation, Newmarch diverted attention to a special field of inquiry, a path towards 'conceptions of the philosophy of statistical methods and results'.[269] Newmarch is also known for including 'Investigations of the mathematics and logic of Statistical Evidence' to the domain of the SSL's activities, in his 1869 presidential address.[270] It might seem natural to conclude that Newmarch abandoned the SSL's original project of collecting facts and paved a path to shape statistics as a mathematical treatment of numerical information. His apparent celebration of mathematical analysis, however, did not contradict his belief that the *JSSL* should provide nicely presented statistical facts for its readers. Newmarch demanded that great care should be directed towards 'the form, size, and arrangement of every Tabular statement', which should contain every essential detail while excluding 'superfluous figure and mark'.[271] Newmarch also drew attention to the 'Quarterly Returns' that were introduced to 'preserve in the Journal continuous observations, scientifically adjusted, of a considerable portion of the phenomena which indicate the social and material progress of the nation'.[272] These tables were 'framed and kept up on a plan of exact uniformity' to serve a useful purpose.[273] In this sense, the *JSSL* did not end the spirit of *aliis exterendum*, which Samuel Jones Lloyd, Lord Overstone, had interpreted in 1851 as being the SSL's mission—to accumulate facts which 'are to be used by others'.[274]

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[268] '1862 Communication from William Newmarch,' 78.
[269] Ibid, 78–79.
[270] William Newmarch, 'Inaugural Address on the Progress and Present Condition of Statistical Inquiry, Delivered at the Society's Rooms, 12, St. James's Square, London, on Tuesday, 16th November, 1869,' *Journal of the Statistical Society of London* 32:4 (1869), 366.
[271] '1862 Communication from William Newmarch,' 79.
[272] Ibid, 79.
[273] Ibid, 79.
[274] '1851 SSL Council Report,' 103–104.

5. Conclusion

This chapter traced the history of the inception of the *JSSL* and examined its scientific role. It revealed that the idea of the SSL as a storehouse of existing facts led to the creation of the *JSSL* and shaped the practice of writing and reading within the SSL.

John Elliot Drinkwater's preliminary sketch indicated that the SSL was designed to provide the machinery for receiving, recording, and circulating facts. Although he did not exclude original investigations from the SSL's activities, he cautiously noted the limited power of the SSL in the field of original surveys. The Prospectus followed Drinkwater's blueprint. The newly established SSL distinguished existing facts from fresh facts and placed an equal importance on the collection of both types of facts. It insisted that circulating existing but unknown or unreachable facts in its publication would provide a great service towards making fresh observations. In this sense, arranging and methodising facts that were buried in thick parliamentary papers and other forms of documents came to be a part of the SSL's scientific work.

The SSL's publication projects were intended to fulfil the goal of circulating facts. The SSL was determined to create its own outlet and dismissed suggestions to publish their proceedings elsewhere. The *PSSL*, born in 1835, was a summary of each ordinary meeting that was initially circulated only among the SSL fellows. In 1837, the SSL created the *TSSL*, which selected important papers from ordinary meetings and made them available for absent fellows as well as the general public. The *TSSL* inspired a critical review by John Robertson in the *Westminster Review*, in which he attacked the *JSSL* for its lack of theory. The suspension of the *TSSL* showed the difficulty the SSL had maintaining its own regular publication due to both financial and scientific reasons. However, these issues did not prevent the SSL from creating the *JSSL* in 1838. To counter the concerns raised by Robertson, the SSL allocated different roles to individual fellows and the SSL itself as a scientific society respectively. While the use of hypotheses and theoretical assumptions was necessary for the fellows' investigation, the SSL was, it claimed, free from speculation, as it was simply a place for registering authentic facts; the *JSSL* was designed accordingly.[275] The SSL Council successfully defended this new publication project by

[275] In the early Royal Society, public reading and perusal apparently provided a same function. See Adrian Johns, 'Reading and Experiment in the Early Royal Society,' in *Reading, Society, and Politics in Early Modern England*, ed. Kevin Sharpe and Steven N. Zwicker (Cambridge: Cambridge University Press, 2003), 244–271.

making it pertinent to the collection of existing facts, a scientific mission that the SSL's very existence depended on. The SSL introduced a single-blind peer-review system to select papers, first, for the *TSSL* and, then, with a slight modification, for the *JSSL*, and it regulated the style of writing, although somewhat loosely. The idea of the SSL being a centre of statistical information shaped the style of writing in the *JSSL*.

Jacob developed the idea of a central data centre in the United Kingdom and expected the British government to fulfil this role. Jacob envisioned a new department specialised in keeping statistical information. He had to be disappointed by the newly created SDBT, as it had more limited capacity than Jacob hoped for. Jacob's idea influenced Mackenzie, who urged the SSL to fill the gap. Mackenzie was aware that the SSL would not be able to carry out an extravagant project and, instead, turned the fellows attention to mundane facts that could be easily collected but would be lost without systematic recording. While Jacob had his contemporaries in mind, Mackenzie saw that the SSL's services would be appreciated by future generations.

Guy's system of scientific note-taking was in line with Mackenzie's idea. Guy demonstrated that gleaning from existing literature was a scientific way of collecting existing facts. Although he was primarily interested in creating a collection of facts for himself, Guy treated his notebooks as museums of facts that could be inherited and used by others even after his death. The examination of his system helps us understand why some statisticians wrote and published articles that were full of information gleaned from other reports and books and why the *JSSL* included unsigned unoriginal statistical tables in its 'Miscellaneous' section. Through the power of its index, the *JSSL* was supposed to function as, according to Stanley, an 'Encyclopædia of Statistics'. This metaphor, however, should be treated with care as, unlike an encyclopaedia, the *JSSL* continued to grow indefinitely and was intended to deliver facts to readers in the future, as Guy expected, beyond an individual statistician's lifespan.

The difficulty of predicting what information the future would need led Wheatley to design the General Index as minutely as possible so that readers in the future would be able to find relevant information in the *JSSL*. Even Newmarch, who is often considered the support of mathematical statistics, embraced the idea that the *JSSL* could provide well-kept statistical facts for the future. Newmarch, as the editor, was responsible for removing the SSL's Latin motto in 1857, but he was also the person who introduced the 'Quarterly Returns' section, which was intended to provide regular statistical observations over time.

This chapter has studied the *JSSL* as a scientific periodical rather than as a mere bundle of 'original' papers. I argue that this approach is necessary in order to understand the 'unoriginal' nature of the *JSSL*. The SSL's Subject Index, published in 1895, tried to make a distinction between original works and unoriginal ones. It may be reasonable today to distinguish original from unoriginal works in a scientific society and to use the amount of original works as an indicator of the contribution made by a scientific society. However, the *JSSL* included many articles that were not 'original' in today's sense. The Subject Index insisted on counting translations and 'papers originally *read* elsewhere, but first *printed* in the Journal' as original works but omitted 'all reprints from other Journals, &c. as well as abridgements of parliamentary reports' altogether from the index.[276] What this chapter has shown is that the publication of 'unoriginal' papers was part of the SSL's scientific mission. While this does not deny the fruitfulness of a close examination of individual papers in the *JSSL*, this chapter shows that those papers should be analysed in relation to the *JSSL* as a joint project with other entities and individuals. The communal nature of the SSL's project cannot be overemphasised because, as I have demonstrated in Chapter One, statistical science in nineteenth-century Britain was fundamentally conceived as a collaborative project. The *JSSL* was created and maintained in accordance with this conception of statistics.

This chapter does not intend to deny that the *JSSL*-hosted discussion was occasionally or even involved in controversy.[277] Although it was not common or exemplary, the JSSL was the place where the Chadwick-Neison controversy occurred in 1844.[278] The *JSSL* was also expected to address pressing public questions. Even the second Earl of Harrowby, who saw one of the functions of the *JSSL* as providing records for prosperity, emphasised the SSL's role in contemporary political debate. He frankly expressed his distrust in

[276] Royal Statistical Society, *Subject-Index of the Journal of the Royal Statistical Society Vols. XXVIII-LVII (1865-1894)* (London: Edward Stanford, 1895). [p. ii]

[277] The JSSL apparently tried to include the records of discussion at ordinary meetings in the *JSSL*. For example, 'Discussion on Mr. Palgrave's Paper,' *Journal of the Statistical Society of London* 36:1 (1873): 153–57.

[278] Edwin Chadwick, 'On the Best Modes of Representing Accurately, by Statistical Returns, the Duration of Life, and the Pressure and Progress of the Causes of Mortality Amongst Different Classes of the Community, and Amongst the Populations of Different Districts and Countries,' *Journal of the Statistical Society of London* 7:1 (1844): 1–40; F. G. P. Neison, 'On a Method Recently Proposed for Conducting Inquiries into the Comparative Sanatory Condition of Various Districts, with Illustrations, Derived from Numerous Places in Great Britain at the Period of the Last Census,' *Journal of the Statistical Society of London* 7:1 (1844): 40–68. For this debate, see Cullen, *The Statistical Movement*, 60 and Schweber, *Disciplining Statistics*, 113–115. For Chadwick's use of statistics, see James Hanley, 'Edwin Chadwick and the Poverty of Statistics,' *Medical History* 46:1 (January 2002): 21–40.

Parliament as a place of calm discussion. He counted one of the SSL's functions as being 'to prepare matters for that great assembly, and that duty it appeared to be performing well'. [279] The SSL's goal was to inform the public and Parliament. Sykes further advanced this idea and claimed that the *JSSL*'s duty was to place before the public 'a careful review and collation of the facts'.[280] In his resignation letter, Newmarch claimed that the SSL had been endeavouring to render the *JSSL* 'a dispassionate authority' on 'many of the important public questions' because 'dealing promptly and practically with the subjects within its own range, which happen to interest the world at large' could bring attention to a new science like statistics.[281] Those aspects are undoubtedly important, but the JSSL should not be reduced to an agonistic place where statisticians fight each other, as such picture would fail to capture the trust and cooperation that statisticians had at the SSL.

This chapter has revealed the SSL's unique understanding of facts. The SSL's devotion to the collection of existing facts and its employment of a bookish method further clarified the SSL's indifference to first-hand observations, which I have suggested in Chapter One. Guy's commonplace book favoured numerous records of second-hand observations over limited numbers of first-hand observations. While the SSL sometimes described its data-gathering activities as 'statistical observation', its nature looks very different from other types of observation, such as that conducted in natural history.[282] Botanists interested in local vegetation far away from their homeland, such as in non-European countries, faced difficulties in directly observing plants. Botanical observation from a distance had to be achieved through mobilisation of a wide variety of technologies to supplement the lack of first-hand observation. Botanists dispatched their trained disciples to foreign countries and had them send back minute observational notes, dried specimens, and seeds. These students employed and supervised local artists to draw fine pictures of local plants so that botanists at home could 'observe' transcribed images of local plants. By contrast, the SSL fellows did not feel the need to visit the local places they studied or to make observations with their own eyes. This was not simply a sign of laziness or carelessness on the part of Victorian statisticians. As Guy's method of scientific note-taking shows, statisticians took considerable care over creating authentic statistical data. Statisticians' lack of interest in first-hand observation suggests that the dichotomy between first-hand and second-hand

[279] '1855 SSL Council Report,' 101.
[280] Ibid, 101.
[281] '1862 Communication from William Newmarch,' 79.
[282] The following example is a brief summary of Bleichmar's brilliant paper on a complicated system of naturalist observation. For more details, see Daniela Bleichmar, 'The Geography of Observation: Distance and Visibility in Eighteenth-Century Botanical Travel,' in *Histories of Scientific Observation*, ed. Lorraine Daston and Elizabeth Lunbeck (Chicago: University Of Chicago Press, 2011), 373–95.

was perhaps meaningless to them, as, in ‘statistical observation’, the object came to exist only after the accumulation of data, which made it impossible to observe anything with their own eyes.

The bookish method of statistics sheds additional light on the remarkable ability of statistical facts to move across time and space. The next chapter discusses this topic in relation to the SSL’s engagement on the discussion of the best mode for a central statistical office on both the national and international level.

Chapter Three

What Makes a Central Statistical Office So Central?

The Role of a Statistical Office in the Production of Statistical Facts, c. 1830–1870

1. Statistical Facts Arranged for Statistical Purposes

On 5 August 1879, Robert Giffen,[1] the chief of the Statistical Department at the Board of Trade (SDBT), was called in before the Treasury Committee on Official Statistics. The committee was appointed to consider improvements to the official statistics system. The committee was particularly concerned with the wasteful duplication of the same statistical data in various documents, a lack of uniformity among those published statistical data, and the mass of details packed into statistical publications.[2] The committee discussed the establishment of a central statistical office to end the confusion arising from the current system of official statistics, or, rather, the lack of one.

In 1876, one year prior to the appointment of the Official Statistics Committee, Giffen submitted a memorandum in which he expressed a similar concern regarding the state of official statistics. Statistical reports published by various government offices were, Giffen observed, swollen by 'superfluous' details.[3] These unnecessary details, compounded by a lack of uniformity in the arrangement of data, made statistical documents a 'bewildering labyrinth' instead of a clear record of the facts of the nation.[4] The official documents were, it appeared to Giffen, virtually inaccessible to the general public. '[It] is little wonder', Giffen wrote, 'that people "do not see the forest for the trees," that statistics are considered only for experts.'[5]

Since Giffen was convinced that accurate and broad statistical data should be readily available to the public, he was frustrated with the intricacy of official statistics, which discouraged the majority from using available data and led the few who attempted to make use of those statistics into misunderstanding.[6] Before joining the SDBT**,** he experienced such deterrence first-hand. As an economic journalist, Giffen was interested

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[1] For Giffen's biography, see Chapter Two footnote 110.
[2] *Copy of Second and Third Reports of the Official Statistics Committee; with the Minutes of Evidence and Appendix*. UK House of Commons Papers, 1881, (39), iii–iv.
[3] He used this expression throughout the text. Ibid, 83–104.
[4] Ibid, 103.
[5] Ibid, 83.
[6] Ibid, 83.

in population statistics, but he felt that official statistics were unapproachable due to the great bulk of 'unnecessary detail'.[7] When the committee asked him whether it was possible to weed out such detail, he replied in the affirmative. As Giffen saw it, unnecessary detail derived from the confusion of two different types of facts. He claimed that government departments mixed up 'what was only required for general use and what was required for administrative use'.[8]

While Giffen deemed it essential to collect accurate statistical facts, he apparently did not believe that every detail should be included in official statistics and made available to the general public. He envisaged that those statistics should be collected for a general purpose and be independent from specific administrative purposes. His idea of statistical data was not a natural or obvious consequence of information gathering. In fact, Giffen himself admitted that it would be natural for a department to collect details that were only relevant to its specific administration while disregarding their possible relevance to other departments.[9]

Giffen insisted that his SDBT, being a department that collected all kinds of statistical information from all departments, had been fighting against such a 'natural tendency'.[10] 'Do any of the statistics which you collect arise out of the administration of the Board of Trade?' the committee asked Giffen.[11] He replied that nothing was collected in connection with the administration of the Board of Trade, with the exceptions of the returns of shipwrecks and railway accidents, both of which, he reminded the committee, were collected by another department at the Board of Trade and not the SDBT. Giffen claimed, 'All the statistics which we [the SDBT] have are collected for the purpose of the statistics themselves; that is to say, the department is instituted for the express purpose of getting these statistics.'[12] While he had to admit that, in reality, the SDBT did not act as a 'central statistical office' due to its lack of control over other departments, he was apparently convinced that a centralised statistical office was a crucial institution for the production of statistical data.[13]

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[7] *Official Statistics Committee Second and Third Report*, 58 q1146. Giffen was also the editor of the *Journal of the Statistical Society of London* (*JSSL*) in 1876–1891. See Chapter Two.
[8] Ibid, 58 q1147.
[9] Ibid, 67, 83.
[10] Ibid, 83.
[11] Ibid, 60 q1163.
[12] Ibid, 60 q1163. [] was inserted for clarification.
[13] Ibid, 61 q1172.

Giffen distinguished statistical data from merely accurate information expressed through numbers and believed that official statistics had to be free from specific purposes. His peculiar concern about the freedom from locality can be called cross-contextual mobility. While the mobility of fact is often characterised by its ability to overcome a physical distance between the original place of observation and the place of its accumulation,[14] Hacking and Agar indicate that there is another type of mobility that is an essential property of statistical fact.[15] Their arguments suggest that statistical facts were consciously designed to be versatile and capable of travelling through different contexts as well as through space and time.[16] It is important to note that the physical and cross-contextual mobilities discussed here are not mutually exclusive, and in reality, statisticians apparently pursued them both. However, making an analytical distinction clarifies the nature of statistical fact and the role of the statistical office.

Giffen apparently understood that a centralised statistical office was necessary to establish the contextual mobility of statistical facts, which leads us to rethink the historical account provided by Hacking and Agar. Agar argues that it was in the first decade of the twentieth century when British statisticians started to produce 'informative statistics' that were collected for a general purpose, as opposed to 'administrative statistics' that were collected for specific administrative purposes.[17] Hacking also insisted that there was no conception of a centralised institution for gathering numbers in Britain throughout the nineteenth century, as facts were collected for specific administrative needs there, although the Prussian Statistical Office had already been created in the first decade of the nineteenth century, he claims, as 'a general all-purpose statistical office' or as an 'office of numbers-in-general'.[18]

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[14] Theodore M. Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton, NJ: Princeton University Press, 1995), ix. Nikolas S. Rose, *Powers of Freedom: Reframing Political Thought* (Cambridge: Cambridge University Press, 1999), 210-211, 214. For the summary of sociological models, see Edward Higgs, *The Information State in England: The Central Collection of Information on Citizens since 1500* (Basingstoke: Palgrave Macmillan, 2004), Ch 2.

[15] Ian Hacking, *The Taming of Chance*, Ideas in Context 17 (Cambridge: Cambridge University Press, 1990), Ch 4 and Jon Agar, *The Government Machine : A Revolutionary History of the Computer* (Cambridge, MA; London: MIT Press, 2003), Ch 3.

[16] Latour is apparently conscious of the cross-contextual mobility of fact, as he analyses the transformation of fact from its original purpose to suit another purpose. However, his discussion tends to focus on the travel from one specific purpose to another and the production of general-purpose fact appears to escape his attention. For example, see Bruno Latour, 'Drawing Things Together,' in *Representation in Scientific Practice*, ed. Michael 1948-Lynch and Steve Woolgar (Cambridge, Mass. ;London: MIT Press, 1990), 47–48.

[17] Agar, *Government Machine*, 96–104.

[18] Hacking, *The Taming of Chance*, 28–29, 32.

While Agar and Hacking imply the absence of the concept of a centralised statistical office in nineteenth-century Britain, Victorian statisticians strongly felt the very lack of such an institution and attributed it to being the cause of the chaotic state of official statistics in Britain. Giffen was far from the first person to propose a centralised organisation as a solution to the issues affecting official statistics. In 1833, some of the invited witnesses at the Select Committee on Public Documents (SCPD) argued the need for a central statistical office. In 1841, eminent statistician Adolph Quetelet presided over the newly established Central Statistical Commission (CSC) in Belgium. As I will show, the CSC became a reference point for the statistical organisation among European countries in subsequent decades. Statisticians at the Statistical Society of London (SSL) pressed the British government to adopt this system, to no avail.[19]

While British statisticians were not successful in installing those centralised institutions, they persistently discussed the best way to organise a centralised statistical body in relation to the production of statistical facts. This raises questions: what made a statistical organisation so pertinent to statisticians in nineteenth-century Britain, why did a statistical office need to be centralised, and how was the design of a centralised statistical office relevant to the nature of the statistical facts that were supposed to be produced there? This chapter aims to answer these questions by examining models of a statistical office that were proposed in the period from the 1830s to the 1870s.

2. The Argument

Through the historical analysis that follows this section, I will argue the following points.

What prompted statisticians to seek a better statistical organisation were perpetual complaints regarding the lack of easy access to reliable government statistics. Although

[19] Giffen was hardly the last person who demanded a reform of British official statistics in the face of disorder, as more than thirty years after Arthur Lyon Bowley took up a similar issue. Arthur L. Bowley, 'The Improvement of Official Statistics,' *Journal of the Royal Statistical Society* 71:3 (1908): 459–95. Ten years later, Bowley and other fellows of the Royal Statistical Society (RSS) formed the RSS Official Statistical Committee and submitted a petition to the British government for reform. 'Committee on Official Statistics,' *Journal of the Royal Statistical Society* 83:1 (1920): 131–33. Arthur Lyon Bowley was a statistician who pioneered a sampling method in social surveys. He was awarded the SSL's Guy Silver Medal in 1895 and became president of the SSL in 1938–1940. While he was a professor of political economy at the University College of London, he taught statistics at the London School of Economics and became the first permanent professor there in 1919. For his *Oxford Dictionary of National Biography* (*ODNB*) entry, see Allen, R. G. D. 2004 'Bowley, Sir Arthur Lyon (1869–1957), statistician.' *Oxford Dictionary of National Biography*. [accessed on 15 Oct. 2018]

governmental offices published various statistical documents, their publications were carried out by different government departments in manners that suited their respective purposes and were independent from the other offices. As a result, statistical data were fragmented by ministerial and geographical borders. The basic function of a centralised statistical office was to merge geographically and thematically scattered facts to produce statistics with complete coverage. The SDBT became a candidate for such a centralised statistical office in Britain, although statisticians repeatedly expressed their dissatisfaction with the limited capacity of the SDBT.

Fragmentation was not the only problem that government statistics suffered. Confusing details, omission of important topics, and wasteful duplication across documents were also criticised. The most serious issue was the prevalence of discrepancies within official statistics because it undermined public trust in official statistics. A simple explanation to account for the inconsistent data was contamination resulting from inaccurate information and baseless speculation. Victorian statisticians, however, realised that the very attempt to integrate fragmented statistical data could create conflicts within consolidated data. The origin of discrepancies was, as they saw it, different interests behind statistical data-gathering. When different departments independently collected data with different purposes in mind, it was reasonable for them to choose a different unit of observation, timing, coverage, methods, and classification that should best serve their respective interests. The uncoordinated data-gathering resulted in the production of heterogeneous statistical facts, which provided contradictory figures on what were supposedly the same topics. Those ‘local’ interests, be it ministerial or regional, also narrowed the scope of information gathering to the extent that collected facts could only serve a specific group of people. Those local interests had to be coordinated and translated to produce homogeneous data that could serve various purposes. In other words, it was an interest of statisticians to produce statistical data that could travel across different contexts.

Victorian statisticians often termed the issue of conflicting interests as the absence of unity and uniformity in statistics, and a solution was sought to fill this void. The Belgian CSC, established in 1841, appeared to Victorian statisticians to be an ideal solution to the issue. The CSC consisted of a statistician who presided over discussion and representatives of all the government offices who were responsible for statistical data collection. The CSC was designed to provide a platform for the negotiation of different interests where multiple actors could harmonise their interests while each actor could keep its independence.

The International Statistical Congress (ISC) popularised the CSC model among European countries as an apparatus to homogenise national statistics. At the same time, the ISC itself served as a platform where representatives of different governments could coordinate their different interests to establish the uniformity in statistical data across countries while avoiding threatening the independence of each country. The ISC's aim was, as Victorian statisticians saw it, to create complete and homogeneous statistical data that should embrace all the branches of statistics of all the countries in the world and should be collected in the same fashion.

Those models, although never fully realised, were relevant to British statistics, as they provided reference points against which the actual state of statistics should be measured and improved.

Victorian statisticians were apparently interested in the idea of the general-purpose statistical fact, which is free from specific administrative purposes. It casts a different light on the suggested similarity between statistics and accounting. Theodore Porter sees statistics and accounting as sharing a similar feature in the sense that both fall within the same category of quantification.[20] Poovey claims that accounting played a crucial role in shaping the modern concept of fact, which, she suggests, reached its maturity in a new science of statistics.[21] Like each entry in an accounting book, the modern fact was conceived as compact, precise, and specific, and yet, it serves as the basis of systematic knowledge. This may appear to be true for the statistical fact, as it was also conceived as the accumulation of small particulars that would reveal hidden social laws. However, I argue, there is a significant difference in terms of the purpose of accumulating facts. While accountants record economic information for the sole purpose of accounting, statisticians assemble facts from various branches of knowledge for indefinite purposes. Statisticians often demanded official statistics be freed from details that, however accurate they may be, served only a specific purpose.

The handling of centrality and locality in a statistical organisation also shaped the form of expertise in statistics. Victorian statisticians generally preferred a system of

[20] Porter, *Trust in Numbers*, 51.
[21] Mary Poovey, *A History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society* (Chicago: University of Chicago Press, 1998). For her account of Victorian statistics, see Ch7 in particular. Also, see Porter's critical review of Poovey's work. Theodore M. Porter, 'Modern Facts and Postmodern Interpretations,' *Annals of Science* 58:4 (2001): 417–22.

coordination among multiple departments that specialised in particular branches of statistics to that of a concentration of statistical capacity in a single office that covered every field. The organisation of statistics in Britain was thus designed to reflect the general-specific duality of statistics. As a comprehensive science of society, statistics embraced all aspects of social life, and yet, it was divided into several specialised branches to take advantage of the division of labour. Similarly, statisticians, as a collective, could learn all the fields of statistical knowledge while individual statisticians could familiarise themselves with only a few specific fields of statistics. The expertise of statisticians consisted of their intimate knowledge of particular branches of statistics and their familiarity with the use of numerical information in general. Although the development of the latter would give birth to mathematical statistics in the late nineteenth century, the Victorian statisticians were mostly concerned with producing general statistical facts, as the mathematical treatment of numbers in general would be meaningless without general statistics.

Victorian statisticians were interested in the establishment of an improved statistical organisation because the stable circulation of complete and homogenous statistical data was pertinent to the scientific practice of correlating. Victorian statisticians could study a single topic by comparing its present state to the past or its state in one country to another. From the temporal and spatial comparison of the same topic, statisticians could evaluate the current state of affairs and, it was hoped, even forecast the respective future course. At the same time, statistics, defined as a comprehensive social science, provided opportunities to uncover hidden social forces that affect different aspects of society. The practice of correlation was conceived as a powerful method of discovering the previously unsuspected relationships among various sectors of social life. However, such action required the existence of correlatable data, which should consist of information that covers apparently unlinked topics and, yet, is collected in the same manner. Statisticians believed that such data would not be a natural product of data-gathering and that a centralised statistical organisation would be required.

Victorians' complaints about the lengthy and often failed search for information corroborates my claim regarding the relationship between a statistical office and the act of correlation. The problem was that one often was unable to locate the whereabouts of the relevant information that suited one's interest, or even to know the availability of such information. As the cause for unguided searching was attributed to the lack of a general picture of the collected data, a centralised statistical office was demanded to fill the gap.

It is important to note that this very idea of searching presupposes a peculiar situation where one was interested in certain topics of which they had so little knowledge that they did not even know where to look. In other words, the problem of searching arose from a willingness to learn what was outside of one's expertise. To discover unsuspected social laws, Victorian statisticians had to correlate variables that lay in different branches of knowledge, which led them to realise that data was isolated by the boundaries of specialised fields and was not readily available for those who were not familiar with those fields.

It may be useful to note the main differences between this chapter and Agar's analysis of the discussion regarding a central statistical office in late nineteenth-century and early twentieth-century Britain. Although Agar's interest in the organisation of a statistical office overlaps mine, my analysis largely diverges from his for two reasons. Agar claims that the best mode of organising a statistical office became a subject of discussion after the expert movement that started in the 1870s and the subsequent specialisation of statistics. However, the Belgian CSC captured British statisticians' attention for almost three decades before the rise of the expert movement. In fact, Agar's account does not fully appreciate the inherent relationship between the discussion of a statistical office and the emergence of statistics as a science in the first half of the nineteenth century. This point leads to a question regarding Agar's discussion on general-purpose facts. He claims that the first attempt at producing general-purpose facts in Britain occurred in the first decade of the twentieth century. He argues that the census of production in 1907 was designed as a scientific survey to produce data without an immediate purpose, which, he claims, should be seen as part of the professionalising statisticians' strategy to assert their expertise.[22] As Hacking suggested, however, the idea of a general-purpose fact already existed at the beginning of nineteenth century and, as I will show, it was also pertinent to British statistics much earlier than Agar assumes. Moreover, Agar's argument does not fully grasp the inherent relationship between a centralised statistical office and the production of general-purpose facts, and as a result, his discussion regarding a statistical office tends to mainly focus on geographical mobility rather than the cross-contextual mobility of facts.

To demonstrate the above stated, the following sections examine three events that extensively dealt with the question regarding the optimal organisation of statistics. First,

[22] Agar, *Government Machine*. pp.96-98.

I examine the SCPD of 1833, which discussed various models for a statistical office to consider the necessity of expanding the SDBT. Second, I examine the reception of the Belgian CSC among British statisticians in the 1840s, and finally, I study the ISC's role in disseminating the CSC model and the British reaction to the ISC's recommendations. Through the analysis of these three topics, I aim to reveal why Victorian statistics wanted to have a 'centralised' statistical body and how it shaped the concept of statistical fact.

3. What is a Statistical Office?

3-1. Central Office to Merge Data

In 1832, the first statistical department in Britain was set up at the Board of Trade as a temporary office.[23] It acquired permanent footing after the SCPD recommended the department's extension in 1833.[24] As the first department in Britain solely dedicated to statistical information, the SDBT played a significant role in discussion regarding the systems of statistics in Britain. Prévost and Beaud have reviewed the system of official statistics across European countries during the period of 1800–1945 claim that the establishment of the SDBT provoked a question which would surface persistently throughout the following century in Britain and other European countries: what was the best organisation for a statistical office?[25] This section examines the SCPD's discussion of official statistical documents and demonstrates the various understandings expressed by the committee regarding what a centralised statistical office should achieve.

The SDBT was not the first office to serve the purpose of state information gathering, as the state already collected information well before the SDBT's establishment.[26] The Board of Trade itself collected information regarding corn prices.[27] What made the SDBT new was its clear intention to accumulate information in the capital's central

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[23] M. J. Cullen, *The Statistical Movement in Early Victorian Britain: The Foundations of Empirical Social Research* (Hassocks: Harvester Press, 1975), 19–21. Lucy Brown, *The Board of Trade and the Free-Trade Movement, 1830-42* (Oxford: Clarendon Press, 1958), 19–22. For the general description of the SDBT, see Ibid. Ch 5. See also Cullen, *The Statistical Movement*, Ch. 1.

[24] Cullen, *The Statistical Movement*, 19–22. Brown, *The Board of Trade*, 28–29. Cullen, *The Statistical Movement*, 21–22. For the Select Committee on the Public Documents, see Stephen John Thompson, 'Census-Taking, Political Economy and State Formation in Britain, c. 1790-1840' (PhD thesis, University of Cambridge, 2010), Ch 6, Section 4 and Oz Frankel, *States of Inquiry: Social Investigations and Print Culture in Nineteenth-Century Britain and the United States*, New Studies in American Intellectual and Cultural History (Baltimore: Johns Hopkins University Press, 2006), 48–49.

[25] Jean-Guy Prévost and Jean-Pierre Beaud, *Statistics, Public Debate and the State, 1800-1945 : A Social, Political and Intellectual History of Numbers* (London: Pickering & Chatto, 2012), 64.

[26] Higgs, *The Information State in England*, Ch 3.

[27] Brown, *The Board of Trade*, 76.

governmental office and make it readily available for legislative discussions. The SDBT's primary purpose was not to collect new information but to concentrate it. Thomas Lack, assistant secretary of the Board of Trade, wrote to the Treasury that 'a distinct Branch for this Purpose obtaining Returns from other Departments and concentrating the Information already in their Possession, might be of great public Utility'.[28]

As I have briefly discussed in Chapter Two, William Jacob,[29] the comptroller of corn returns at the Board of Trade, expressed a similar view regarding the desirability of establishing a department to concentrate facts that were already collected by other offices. In early 1832, Jacob circulated a paper to direct his colleagues' attention to the disarray of existing statistics.[30] According to Cullen, this internal document was the same paper that Jacob later presented at the SSL meetings in 1834 and 1835 and, then, published in the *Transactions of the Statistical Society of London* in 1837.[31] As Jacob observed, collected statistical facts were difficult to use because they were scattered across documents and 'so mingled with a vast mass of irrelevant, or unimportant, or tiresome details'.[32] To resolve this issue, Jacob suggested the creation of a new department at the Board of Trade whose role was to 'accumulate, classify, and simplify' the collected statistical information so that they would be both easily available and comprehensible.[33] The newly created SDBT, however, did not satisfy Jacob.

The SDBT was expected to compile statistical tables and make them available to parliamentary debates when necessary.[34] G. R. Porter[35] became the head of the new department, and Rawson W. Rawson[36] was transferred from the Corn Department to be his assistant.[37] Under Porter's supervision, the first *Tables of the Revenue, Population, Commerce*, also known as Porter's Tables, were published in 1833, and from 1835, they were published regularly until his death in 1852.[38]

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[28] BT 24/1, Thomas Lack to the Treasury, 31 Mar. 1832 cited in Brown, *The Board of Trade*, 76.
[29] For Jacob's biography, see Chapter Two footnote 56.
[30] Cullen, *The Statistical Movement*, 19–20.
[31] Ibid, 19–20.
[32] William Jacob, 'Observation and Suggestions Respecting the Collection, Concentration, and Diffusion of Statistical Knowledge Regarding the State of the United Kingdom,' *Transactions of the Statistical Society of London*, 1837, 1.
[33] Ibid, 2.
[34] Brown, *The Board of Trade*, 87.
[35] For Porter's biography, see Chapter One footnote 76.
[36] For Rawson's biography, see Chapter Two footnote 88.
[37] Cullen, *The Statistical Movement*, 22.
[38] Brown, *The Board of Trade*, 83. The Porter's table was apparently replaced by the *Statistical Abstract* firstly published in 1854.

The SDBT became a permanent office in 1833 after the SDBT's extension was recommended by the SCPD.[39] The SCPD deserves serious scholarly attention, as it prompted discussion on the role of a statistical office as part of deliberations regarding the best mode of supplying statistical information to Parliament. While the idea of a central statistical office at the SCPD has received scholarly attention from historians, the considerable difference among conceptions of a statistical office expressed during the committee's hearings has not been fully appreciated. There were three important witnesses who gave their opinions regarding the conditions of statistics: John Marshall,[40] J. R. McCulloch,[41] and John Bowring.[42] Marshall and McCulloch were important figures regarding the establishment of the SDBT, as both were proposed candidates for the head of the SDBT.[43] Joseph Hume,[44] a radical member of parliament (MP), backed Marshall and Charles Poulett Thomson,[45] the vice president of the Board of Trade, supported McCulloch, although Porter was chosen in the end.[46] Bowring's idea of a central statistical office has drawn attention from historians due to his relationship with Jeremy Bentham. Bowring was joint editor of the *Westminster Review* and, after Bentham's death, became his literary executor. It has been concluded that Bowring's idea of a centralised statistical office was a product of Bentham's theory of government, but it has not been fully appreciated that Bowring was not the only person who pursued the idea of a centralised statistical office and that his discussion was deeply embedded in the contemporaneous discourse on the management of statistical information.[47] The difference among these three figures illustrates the different conceptions of a statistical office in this period and the nature of the statistical data it was supposed to produce.

3-2. Lack of Interrelation in Data

As Brown suggests, the formal establishment of the SDBT can be seen as a response to

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[39] Cullen, *The Statistical Movement*, 19–21. Brown, *The Board of Trade*, 19–22.
[40] For Marshall's biography, see Introduction footnote 40.
[41] For McCulloch's biography, see Chapter One footnote 33.
[42] For Bowring's biography, see Introduction footnote 1.
[43] Brown, *The Board of Trade*, 21–22.
[44] For his *ODNB* entry, Chancellor, V. E. 2016 'Hume, Joseph (1777–1855), radical and politician.' *Oxford Dictionary of National Biography.* [accessed on 16 Oct. 2018]
[45] For his *ODNB* entry, see Buckner, Phillip. 2008 'Thomson, Charles Poulett, Baron Sydenham (1799–1841), politician and governor-in-chief of British North America.' *Oxford Dictionary of National Biography.* [16 Oct. 2018]
[46] Brown, *The Board of Trade*, 28–29. Cullen, *The Statistical Movement*, 21–22.
[47] Brown, *The Board of Trade*, 3–4. For a brief summary of Bowring's idea, see Thompson, 'Census-Taking, Political Economy and State Formation in Britain, c. 1790-1840,' 176–179.

an economic crisis.[48] However, the ostensible scope of the SCPD, which recommended the establishment of the SDBT as a permanent office, was more specific. The SCPD was set up to consider the optimal method of providing Parliament information derived from public documents with a view towards 'Economy, facility of Access and clearness of Arrangement'.[49] As this wording shows, the SCPD was concerned with the lack of accessibility of published statistical information. The SCPD discussed several factors that put the statistics of the British Empire into disarray.[50] One of the causes was ad hoc requests individually made by members of the House of Commons to solicit specific information from governmental offices. Those requests disrupted the orderly production of statistical documents and resulted in publishing those documents in non-uniform ways that only suited individual needs or in piling up documents that merely duplicated what was already available.[51] In other words, those statistical documents available to the public lacked 'regularity and perspicuity'.[52]

To improve accessibility and transparency, John Marshall began privately compiling statistical information from parliamentary documents and other sources to provide comprehensive statistical data for public use.[53] One of the questions the SCPD considered was whether Marshall's project should be officially supported.[54] The committee eventually decided that Marshall should receive government aid to complete his work from 1799 to 1820 and that the SDBT should then take over the task from 1820 onward.[55] In 1834, a year after the SCPD's hearing, Marshall's work was published as two volumes of a statistical digest, three thousand copies of which were purchased by the government and distributed to all MPs.[56]

During the hearing, Marshall described the chaotic state of official documents to the

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[48] Brown, *The Board of Trade*, 77.
[49] *First Report from the Select Committee on Public Documents: With the Minutes of Evidence, and an Appendix*. UK House of Commons Papers, 1833, (44), 3.
[50] Ibid, 3.
[51] Ibid, 3.
[52] Ibid, 3.
[53] Marshall's interest in compiling data apparently started in 1819 and grew stronger throughout the 1820s. See, John Marshall, 'Conclusions' in *An Analysis and Compendium of all the Returns made to Parliament (since the commencement of the nineteenth century) relating to the Increase of Population in Great Britain and Ireland* (London: 1835), iii–vii. Also, see Cullen, *The Statistical Movement*, 21–22. Thompson, 'Census-Taking, Political Economy and State Formation in Britain, c. 1790-1840,' 177.
[54] Ibid, 177.
[55] *SCPD First Report*, 3, 26.
[56] See Marshall's *ODNB* entry although Thompson claims it was 1,250 copies. Thompson, 'Census-Taking, Political Economy and State Formation in Britain, c. 1790-1840,' 177, n. 69.

committee and complained about the lack of interrelationship among official documents. He observed that 'scarcely any two papers having relation to each other, and consequently whatever reference was made to them, led only to perplexity'.[57] Individual requests from MPs exacerbated the problem as a result of their want of uniformity and reference to each other.[58]

As Marshall pointed out, the lack of interrelation in statistical data led to the serious issue in government statistics where one could end up facing conflicting results from different government documents.[59] From his experiences, he cited cases of disparities among statistical data in official documents.[60] He attributed this to the discrepancies in methods of observation: some returns covered the period starting from 5 April and others from 5 July or 10 October; some returns were made for the whole United Kingdom, while others for Great Britain, excluding Ireland.[61]

Disagreement within public documents was a threat to public trust in statistical data. Interestingly, Marshall did not see that these issues were caused by an inaccuracy of the documents.[62] In fact, Marshall claimed that 'the Public Accounts in detail' were of 'the highest degree satisfactory' and that the 'arithmetical precision' was 'most highly creditable'.[63] Instead, Marshall suggested that the disagreement was caused by government offices' indifference towards each other's activities, as he noted that the problem manifested when various documents were consolidated.[64] Marshall claimed, '[T]he great difficulty arises in bringing them into a focus, so as to show all the different interests of the country in a concise and perspicuous point of view.'[65]

3-3. Lack of Accurate Data

Marshall's view makes an interesting contrast with McCulloch's because, as Thompson points out, McCulloch was not satisfied with the accuracy of British statistics.[66] McCulloch criticised British statistics both in quantity and quality, as available

[57] *SCPD First Report,* 6 q11.
[58] Ibid, 6 q13.
[59] Ibid, 7 q16.
[60] Ibid, 7 q16–19.
[61] Ibid, 7 q16–19.
[62] Ibid, 7–8 q28.
[63] Ibid, 7–8 q28.
[64] Ibid, 7–8 q28.
[65] Ibid, 7–8 q28.
[66] Thompson, 'Census-Taking, Political Economy and State Formation in Britain, c. 1790-1840,' 178.

information was often inaccurate and important information was omitted.[67]

To resolve these issues, McCulloch proposed following the German examples and establishing the Board of Statistics in London.[68] The board should 'collect information of all sorts about statistics, both British and, Foreign' and 'digest and publish that information, to assist in getting the censuses correctly taken, and, in short, in getting every sort of information that might be necessary for the elucidation of the great questions with respect to national policy'.[69]

McCulloch's board aimed to establish a constant flow of information from the provincial industrial cities to the metropolis, informing the centre about the ever-changing local situations through regular reports.[70] In McCulloch's system, resident agents were assigned the vital role of ensuring the constant flow of accurate information.[71] While McCulloch assumed that the existing administrative machinery was sufficient to collect accurate information in agricultural areas, he deemed it essential to appoint resident agents in major manufacturing cities whose sole mission was to collect information because, unlike agricultural areas, in those cities 'the classes of workmen are so various, and the businesses in which they are engaged so very different'.[72] Those agents were to transmit 'detailed accounts of the state of the poor, of the variations of wages and prices, and of all the improvements and changes that occur in manufacturing industry' to the Board of Statistics, which should be located in London.[73] Accordingly, he argued that the resident agents should be placed in major cities, such as Manchester, Leeds, Glasgow, and Birmingham, but he did not think it was realistic or necessary to have agents in every town.[74]

McCulloch set high standards for those local agents, as he envisaged their tasks to be highly demanding. They must be intelligent, McCulloch observed, and 'well versed in statistical inquiries' like James Cleland,[75] who was an avid statistical writer reporting

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[67] *Second Report from the Select Committee on Public Documents: With the Minutes of Evidence, and an Appendix*. UK House of Commons Papers, 1833, (717), 19–25.
[68] For McCulloch's idea of the Statistical Board, see *SCPD Second Report*, 25–27 q223–231. Also, see John Ramsay McCulloch, 'State and Defects of British Statistics,' *Edinburgh Review* 61 (1835): 154–81.
[69] *SCPD Second Report*, 25–26 q223.
[70] Ibid, 25–26 q223.
[71] Ibid, 25–26 q223.
[72] Ibid, 26 q226.
[73] Ibid, 25–26 q223.
[74] Ibid, 25–27 q223/230–231.
[75] James Cleland was a civil administrator in Glasgow and a statistical enthusiast. He conducted a local

extensively on his local city of Glasgow and whom McCulloch held in high regard.[76] McCulloch claimed the advantage of employing intelligent locally resident agents as a means of information gathering over the practice of sending deputations from the central government for local inspection.[77] In fact, McCulloch insisted the deputation from London was useless due to its lack of intimate knowledge of local situations. Local people would be 'shy about communicating information' to persons just visiting, and the deputation would fail to notice 'many circumstances that ought to be inquired into', of which a resident agent would be able to notice, investigate, and inform London.[78] Overall, McCulloch claimed, an intelligent agent 'living upon the spot' was a better option to produce accurate accounts, as he would 'acquire his information from a variety of sources, and would be far less liable to be imposed upon and misled'.[79]

In 1835, McCulloch further developed his idea of the Statistical Board in a paper published in the *Edinburgh Review* that reviewed the reports of the SCPD as well as two other statistical publications.[80] In this paper, McCulloch highlighted the Statistical Board's role in authenticating statistical facts.

McCulloch critically reviewed the state of British statistics for its lack of concentrating statistical data and the inaccuracy of available data. He acknowledged that, while a vast amount of information was collected in Britain, it was largely defective.[81] McCulloch lamented, '[I]nstead of accurate, well authenticated data, we have frequently nothing to trust to, but vague conjectural estimates.'[82] The lack of authentic facts led to the prevalence of contradictory statistical statements, which eroded public trust in statistical data.[83] In particular, he highlighted the lack of reliable information regarding provincial areas. 'If an individual living in Kent wishes to learn anything of Northumberland,' McCulloch wrote, 'he has nothing for it but to go there; or to trust to the meagre, and,

census in Glasgow, whose results were published as *Rise and Progress of the City of Glasgow* in 1820. After Section F was created at the British Association for the Advancement of Science (BAAS) in 1833, Cleland presented his statistical works a few times before his death in 1840. For his *ODNB* entry, see Nenadic, Stana. 2004 'Cleland, James (1770–1840), statistician and civic administrator.' *Oxford Dictionary of National Biography*. [accessed on 16 Oct. 2018]

76 *SCPD Second Report*, 26 q226.
77 Ibid, 26 q228–229.
78 Ibid, 26, q228–229.
79 Ibid, 26, q229.
80 McCulloch, 'State and Defects of British Statistics.'
81 Ibid, 158.
82 Ibid, 158–175.
83 Ibid, 158.

generally speaking, inaccurate details to be found in some Gazetteer or Encyclopedia.'[84]

McCulloch envisaged that the introduction of the Statistical Board could resolve the situation by providing complete and authentic facts.[85] He reiterated, with minor revisions, the proposal he made before the SCPD for establishing the board. In the revised plan, he increased the number of resident agents to twenty, as opposed to the original five, with ten of the agents in England and ten in Scotland and Ireland.[86] McCulloch, again, highlighted the importance of intelligent resident agents because they were vital for circulating accurate information to the public and putting 'an end of the contradictory statements' in statistics, 'which were good for nothing, except to destroy each other's credit'.[87] Also, those resident agents would constantly update London regarding the state of affairs in provincial cities, which the irregular investigation of parliamentary committees and the 'Commissions of Enquiry' would not be able to provide.[88] To secure the constant flow of accurate information from the provinces, McCulloch insisted the agents should be rewarded a generous salary of no less than £650, or even £700, a year. That was almost double William Farr's initial salary of £350 at the General Register Office (GRO) in 1839.[89]

It is important to note that McCulloch envisaged the Statistical Board as a complementary organisation to rather than a complete substitute for the existing information-gathering machinery. As he stated to the SCPD, McCulloch did not see any point in placing agents in smaller towns in agricultural districts, as, he believed, cooperation of those who worked in existing machineries, such as census takers and magistrates, could correct the issues of agricultural statistics.[90] Similarly, he thought improvement in the existing machinery could fix the issues in the statistical data of population, births, marriage, and deaths.[91] The introduction of the new machinery of the Statistical Board aimed to make London intimately acquainted with the principal cities, which, as McCulloch saw, the existing

[84] Ibid, 155–156.
[85] Ibid, 177–180.
[86] Ibid, 179.
[87] Ibid, 178.
[88] Ibid, 179.
[89] Ibid, 177–179. For Farr's salary, see William Farr, *Vital Statistics: A Memorial Volume of Selections from the Reports and Writings of William Farr*, ed. Noel A. Humphreys (London: Sanitary Institute of Great Britain, 1885).p. xii, xvi. The Treasury acknowledged Farr's valuable service and agreed to raise his salary to £800 in 1855 and £1,100 in 1874.
[90] McCulloch, 'State and Defects of British Statistics,' 180.
[91] Ibid, 177.

machinery could not achieve.[92]

In McCulloch's design of the Statistical Board, investigative ability and local knowledge were central. It appeared to reflect his conception of statistics, as he saw statistics as a science closely associated with geography, which should produce a comprehensive picture of a particular place.[93] While McCulloch admitted that topographical details were unnecessary for statistics, the information regarding 'its climate, soil, native products, agriculture, manufacturers, and population' was essential to statistical works, as one of the principle objects of statistics was to exhibit 'the means and sources of the national wealth, its amount, and distribution'.[94] He severely criticised the French political economist, Jean-Baptiste Say, as 'most erroneous' because Say wanted to exclude territorial description from the domain of statistics.[95] Although McCulloch's conception of statistics appeared to be influenced by the German tradition of statistics, he was not completely satisfied with what he thought of as a German idea of statistics, which excluded history and theory and only aimed to provide a complete account of a country or a place at a given time.[96] He insisted that 'descriptive statistics' must be combined with 'comparative statistics', by which he meant that statistics should compare the present state of a country with its past, or one country with another, to identify the circumstances from which discrepancies among different countries, or different eras of one country, arose.[97] Without such comparison, 'no details, however accurate, can be of much value'.[98]

3-4. Lack of Complete Data

Bowring, another key witness at the SCPD, conceived of a statistical office very differently than McCulloch's. While McCulloch's system aimed to concentrate information in the centre of the provinces, Bowring was also interested in consolidating statistical data from various specialised fields of statistics. Prior to Bowring's appearance at the SCPD, he submitted a letter, dated 25 February 1833, explaining the need for a Statistical Department 'for the collection, arrangement and communication of such Public

[92] Ibid, 177.
[93] Ibid, 156–157.
[94] Ibid, 156–157.
[95] Ibid, 156.
[96] Ibid, 156–157. Goldman also points out German influence on McCulloch's conception of statistics. Lawrence Goldman, 'Statistics and the Science of Society in Early Victorian Britain; An Intellectual Context for the General Register Office,' *Social History of Medicine* 4:3 (1991), 420.
[97] McCulloch, 'State and Defects of British Statistics,' 157.
[98] Ibid, 157.

and other Documents'.[99] He envisaged that the Statistical Department should embrace diverse topics and be divided into six divisions, each of which was dedicated to one specific field: 'Financial', 'Commercial', 'Educational', 'Jurisprudential', 'Public Works', and 'Public Opinion'.[100] Bowring further divided each division into subdivisions and enumerated types of information to be collected.[101] Bowring believed that, while each specific division should have a chief who would devote their attention to an assigned branch, the entire department should be run by 'one general or directing head'.[102]

With regards to the existing information-gathering machineries, Bowring seemed to have more faith than McCulloch, who insisted on the need for a new investigative machinery for the collection of accurate information. Bowring's statistical department was apparently designed to collect information through existing channels.[103] He enumerated sources and offices from which data could be drawn.[104] For the collection of financial statistics, he listed 'Budgets of different countries; Reports of Ministers; Legislative Discussions' as sources to be consulted.[105] Regarding commercial statistics, he stated that 'a series of Questions should be forwarded to all Consular, Colonial, and other appropriate Agents' to receive their regular reports in addition to collecting available statistical publications.[106] Education statistics could be difficult to acquire, as there was no ministry of public instruction in Britain and, as Bowring saw it, the establishment of such a ministry with administrative functions would be 'scarcely possible, and if possible, scarcely desirable'.[107] Instead, he turned to readily available publications, such as the reports of the ministries of public instruction in foreign countries, journals of the societies that promoted public education, and other periodicals on education.

The comparison between McCulloch's and Bowring's plans illustrates the different emphases in their plans. However, it would be wrong to conclude that Bowring was not interested in establishing the constant flow of information from the provinces to the capital, with which McCulloch was mainly concerned. After all, consolidating statistical data from different fields of statistics and from different locations are not mutually

[99] *SCPD Second Report*, 56.
[100] Ibid, 57.
[101] Ibid, 57–59.
[102] Ibid, 59.
[103] Ibid, 57–59.
[104] Ibid, 57–59.
[105] Ibid, 57.
[106] Ibid, 57–58.
[107] Ibid, 58.

exclusive. In fact, Bowring argued for the need to accumulate local information in the centre when he was called before the SCPD on 30 July 1833. He contrasted the French and British systems and pointed out the lack of regular communication between the central government and local authorities in Britain.[108] He suggested this should be changed by installing a machinery to gather local facts.[109] One committee member was not fully convinced, as he perceived a significant difference in the systems of government between France and Britain.[110] The committee member pointed out that the central French government had a stronger power over local authorities than its British counterpart.[111] Bowring admitted the difference and replied, '[I]t would be quite impossible to introduce French administrative centralization into this country, and if possible to introduce it, its introduction would be most undesirable.'[112] However, he insisted that the centre-province link could be easily established without major reform in a bureaucratic machinery by simply appointing a 'man of sufficient intelligence' in every parish from whom the centre should receive a regular report.[113]

Unlike McCulloch's high expectation for local agents, Bowring's wording suggests his selection criteria was not very strict. This impression is corroborated by Bowring's assumption that 'such a man might be found without any great difficulty, and without any general re-organization of our administrative system'.[114] Bowring thought local authorities, being familiar with local circumstances, would be able to select persons fit for the purpose, although the central government should reserve the power to interfere in cases where evidence should arise to indicate the unfitness of the officer.[115]

The SCPD's hearing with Bowring moved back and forth between establishing a centre-provincial flow of information and interministerial storage of statistical data, on which Bowring's letter focused. One member of the committee apparently thought the former would be achieved without much problem and brought the discussion back to the latter topic.[116] He suggested that the most important thing was to establish the central office in London with the objective of arranging information from various governmental offices

[108] Ibid, 52 q508.
[109] Ibid, 52 q508.
[110] Ibid, 53 q510–511.
[111] Ibid, 53 q510–511.
[112] Ibid, 53 q511.
[113] Ibid, 53 q512.
[114] Ibid, 53 q512.
[115] Ibid, 53 q514.
[116] Ibid, 53 q515.

and regularly informing Parliament and the country at large, as, he assumed, individual government offices would find the best way to collect statistical data on their own.[117] To this opinion, Bowring replied affirmatively.[118] Bowring cited French and Belgian statistical departments as examples of 'central offices' that concentrate general statistical facts.[119] Bowring, however, did not forget to mention that such a statistical department could also provide for geographical centralisation of statistical data. He claimed that Belgium not only had a central statistical department attached to the central government under the control of the Ministry of Interior but also 'a Statistic Department attached to every Provincial Government' which corresponded to the central statistical department.[120]

Bowring's idea of a centralised statistical department was linked to his idea of general statistics. He summarised the fundamental issue of British statistics:

> We have no general Statistics. If a question were asked upon any statistical topic, for instance, the quantity of acres in this country covered with wood, or the quantity of acres employed for pasturage, I do not know where the information could be found for answering such a question, nor do I conceive that any individual industry could any where discover the means of coming to a satisfactory result; and so with respect to any other specific fact.[121]

Parliament attempted to supplement this deficit by allowing its members to request specific information whenever they needed it. It resulted in, as Bowring observed, the wasteful publication of 'particular and partial documents' for specific facts.[122] To prevent this, he envisaged, general statistics should be constantly updated and readily available. 'Statistics, in order to be useful, should be applied to the whole field of government', as one branch of statistics could be related to another in various ways. To arrange diverse statistical subjects into general statistics, 'a very large view' should be taken of the whole topic.[123] Bowring apparently thought a single office would be capable of 'collecting, arranging, and preparing' all the statistics.[124] His Statistical Department would concentrate on statistical facts in one place and make them readily available to Parliament.

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[117] Ibid, 53 q515–516.
[118] Ibid, 53 q515–516.
[119] Ibid, 53 q517. Note that Bowring apparently used 'statistical' and 'statistic' (perhaps, he was pronouncing 'statistique' in French) interchangeably. In original, Bowring said: 'There is a. Statistic Department in France, attached to the Minister of the Interior and to the Ministry of Commerce, and its business is the collection of facts.'.
[120] Ibid, 53 q517. 'Statistic' is the word used in the original document.
[121] Ibid, 54 q519.
[122] Ibid, 54 q519.
[123] Ibid, 55 q528.
[124] Ibid, 56 q541.

He suggested that this arrangement would make wasteful ad hoc parliamentary reports unnecessary and save a large enough expense to make the cost of creating a new department acceptable.[125]

Bowring's concern over the absence of general statistics should be understood in accordance with his view that 'isolated facts' were of little value.[126] It explains why he was interested in consolidating information from every branch of statistics and every parish in England. He was also eager to collect statistical data from abroad because, as he saw it, 'English statistics will be of little comparative value, unless at the same time the Statistics of other countries are gathered together'.[127] As he understood, the best way to supply statistics to Parliament and the general public was to create a department that should specialise in consolidating statistical data.[128]

Witnesses who stood before the Select Committee articulated the problem in official statistics differently, which led them to propose different solutions. For Marshall, the main issue was the existence of conflicting facts, which derived from different interests. To serve their own interests, different departments in government adopted different units of observation and timing for collecting data.

McCulloch also saw that the disagreement among collected facts was a fundamental threat to statistics, as it cultivated distrust in statistics. However, it appeared to McCulloch that the root cause of the issue was a lack of machinery that could regularly transfer authoritative facts from provincial cities to the central government in London. He believed that the gap should be filled by the establishment of a Statistical Board in London. He insisted that it would be imperative for the future Statistical Board to employ highly intelligent resident agents in major manufacturing cities who had intimate and comprehensive knowledge about ever-changing local situations, as the information of those cities could not be obtained by other means. It is important to note that, as McCulloch's comparison between the statistical board and government inquiries suggests, the board was designed to have an investigative capacity rather than simply to consolidate statistical documents from the other departments.

Bowring's Statistical Department was also concerned with establishing the flow of

[125] Ibid, 55 q529.
[126] Ibid, 55 q529.
[127] Ibid, 56 q541.
[128] Ibid, 52 q505.

information from provincial areas to central London. However, unlike McCulloch, Bowring did not see the need for highly qualified local agents because, for Bowring, the main issue was not the inaccuracy of collected facts. Instead, Bowring's Statistical Department was designed to deal with the isolation of facts. In his eyes, specific and partial data were useless, and from this perspective, Bowring aimed to consolidate fragmented facts from different branches of statistics and different locations into a statistical office in London. He accepted the thematic divisions within his proposed office, but his proposed Statistical Department was clearly designed to keep sight of the larger picture that embraced all branches of statistics. To ensure completeness of statistics, he suggested appointing a general director who should be above the head of each specialised division.

Bowring and Marshall appeared to share the view that scattered facts in various official documents should be assembled with a general view toward their purpose. It can be argued that Bowring was more ambitious in the sense that his Statistical Department aimed to end the isolation of facts caused by both geographical and topical boundaries and to produce a complete picture of Britain. However, Bowring appeared to be unaware of the possibility of the existence of different interests behind statistical data-gathering, which marks his fundamental difference from Marshall, as Marshall hinted that this was the cause of contradictory facts.

Thompson has made the important observation that the SCPD did not call John Rickman[129] to give his opinion to the committee.[130] Rickman had been responsible for census taking since the first British census of 1801 and, arguably, was one of the most important people in terms of the collection of statistical facts in this period. Yet, the committee chose to hear from McCulloch and Bowring, who were, as Thompson rightly points out, more users rather than producers of statistical data.[131] Their limited knowledge of the practical aspects of statistical data-gathering poses the question as to why the SCPD called two statistical users as opposed to a professional statistical producer in the first place. It is vital to remember that the entire purpose of the SCPD was to discuss the best way to make statistical data that was buried in numerous public documents easily available to the members of Parliament, who were also mere users of statistics. In light of this, it was not unreasonable to hear the views of statistical users outside of the

[129] For Rickman's biography, see Chapter One footnote 114.
[130] Thompson, 'Census-Taking, Political Economy and State Formation in Britain, c. 1790-1840,' 179.
[131] Ibid, 179.

government rather than that of producers who had intimate knowledge of state information-gathering machineries. This provides an important frame of reference underlying the theory of a statistical office for the decades that followed. That is, a statistical office was often conceived as an organisation to help the publication of statistical data rather than an investigative organisation. The two functions are not mutually exclusive, and as seen in the case of McCulloch's model, a single office could have both functions. However, making the distinction helps us visualise the absence of the survey and research functions in some models of a statistical office.

The SCPD concluded that the SDBT should be extended. The SDBT was assigned the task of obtaining statistical information from other governmental offices, such as the Treasury and the Home Office, and arranging it for publications whose topics should cover various branches of statistics, including finance, trade, population, crime, and colonies.[132] Porter, the head of the SDBT, was seemingly more ambitious in his aims than just obtaining information from other governmental offices.[133] He asked his contacts in provincial cities to transmit statistical information, although this aspect of his scheme was apparently unsuccessful.[134]

4. Belgian Model of Coordinating Different Offices

The SSL Council Report of 1849, seventeen years after the establishment of the SDBT, celebrated the dissemination of the idea of a 'central office of Statistics' among European countries.[135] The SSL insisted that those European statistical offices were 'in imitation of' the SDBT in Britain.[136] The SSL went further to claim that the establishment of the SDBT in 1832 prompted 'the immediate erection of the Bureau de la Statistique Générale de la France' in 1833.[137] The reality appeared to be the other way around since, as shown in the previous section, Bowring used the French institution as an example of a central statistical office to support the formal establishment of the SDBT in 1833. While the SSL's assertion appears to be a product of misguided patriotism, it tells us two important things: the idea of a central statistical office and its dissemination was a proper topic in the SSL, as a self-declared learned society dedicated to statistical science, and the organisation of statistics

132 *SCPD First Report*, 3.
133 Brown, *The Board of Trade*, 82–84. Cullen, *The Statistical Movement*, 22–24.
134 Brown, *The Board of Trade*, 82–84. Cullen, *The Statistical Movement*, 22–24.
135 'Fifteenth Annual Report of the Statistical Society of London,' *Journal of the Statistical Society of London* 12:2 (1849), 98.
136 Ibid, 98.
137 Ibid, 98.

in Britain was often discussed in relation to its counterparts in foreign countries.

These points were particularly evident during the SSL's discussion regarding the Belgian CSC, which was repeatedly referred to in the discussion on a statistical organisation not only in Britain but also in other European countries.[138] The CSC in Belgium was created by Belgian royal decrees on 16 March 1841 and under the Belgian Ministry of the Interior. Quetelet was appointed as the president and remained in the position until his death in 1874. The secretary of the CSC was Xavier Heuschling, who was also the chief of the Board of General Statistics (*Bureau de Statistique Générale*) in the Ministry of the Interior.[139] While the SSL was pleased with its supposed success for a British model, it was willing to concede that Belgium had the best system and provided the model for the rest of the world. The Council Report reads, 'It is in Belgium, however, that we now see the most complete organisation for statistical investigation, in the Central Commission of Statistics, at Brussels, under the presidency of M. Quetelet, with its affiliated Commissions in every province.'[140]

Prior to the establishment of the CSC, Belgium had a statistical office and a statistical commission, formed 3 July 1826, although Belgium was still at that time a part of the United Kingdom of the Netherlands.[141] Édouard Smits directed the statistical office in the Hague as well as served as the general secretary of the statistical commission.[142] Although little is known about Smits' activities in Anglophone scholarship, he apparently remained a key figure in the production of statistics even after the Belgian revolution of 1830, which threw out the Dutch administration from Brussels. Immediately after the revolution, on 24 February 1831, the Belgian provisional government established the new Board of General Statistics and appointed Smits as its director.[143] Smits, with the support of Quetelet, published the population census report in 1832.[144] When Smits resigned his position at the Board of General Statistics in 1841, he was chosen as a member of the

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138 Prévost and Beaud, *Statistics, Public Debate and the State, 1800-1945*, 72.
139 Adolphe Quetelet et al., 'Notice of the Establishment of the Central Statistical Commission of Belgium,' *Journal of the Statistical Society of London* 4:3 (1841), 227.
140 '1849 SSL Council Report,' 98–99.
141 Nico Randeraad, *States and Statistics in the Nineteenth Century: Europe by Numbers*, trans. Debra Molnar (Manchester: Manchester University Press, 2010), 17–18. Also, see Armand Julin, 'The History and Development of Statistics in Belgium,' in *The History of Statistics, Their Development and Progress in Many Countries; in Memoirs to Commemorate the Seventy Fifth Anniversary of the American Statistical Association*, ed. John Koren (New York: Macmillan Company of New York, 1918), 126.
142 Julin, 'The History and Development of Statistics in Belgium,' 126.
143 Randeraad, *States and Statistics in the Nineteenth Century*, 22.
144 Ibid, 22.

newly established CSC.[145]

The previous Belgian statistical organisations were not unknown among British statisticians, as Bowring mentioned the Belgian statistical office in his testimony to the SCPD in 1833.[146] However, it was the newly established CSC led by Quetelet that became a model for other European countries to follow. In August 1841, Quetelet advertised his new statistical organisation at Section F of the British Association for the Advancement of Science (BAAS) and explained the CSC's functions to his friends in Britain.[147] Two months later, the *Journal of the Statistical Society of London* (*JSSL*) published a group of documents regarding the establishment of the CSC in Belgium that consisted of Quetelet's report, the Belgian Minister of the Interior Charles Liedts' proposal for the establishment of the CSC, and King Leopold's royal decrees for the establishment of the CSC in Belgium.[148]

The proposal for establishing the CSC observed that the current Belgian system was in disorder. The old Belgian statistical office established in 1831 was supposed to provide exact and complete statistical documents 'on all the points' in statistics.[149] However, the proposal argued that the statistical office failed to enlist cooperation from the other governmental offices.[150] As a result, some of the governmental offices collected statistics in isolation from each other while others simply neglected to collect statistics at all.[151] It led to 'discrepancies, needless repetitions, and omissions' among official data. This diagnosis shared a striking similarity with the issues raised at the SCPD.[152]

Facing the lack of complete statistics and the contradictory data, the establishment of the CSC was proposed to introduce 'a unity of purpose, a precise object, and carefully considered plans of investigation' into Belgian statistics.[153] The CSC requested all governmental offices that dealt with statistical data to send representatives who would be

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145 Ibid, 22–23. Julin, 'The History and Development of Statistics in Belgium,' 130.
146 *SCPD Second Report*, 53 q517. See also the previous section.
147 British Association for the Advancement of Science., *Notices and Abstracts of Communications to the British Association for the Advancement of Science at the Plymouth Meeting, August 1841* (London, 1842), 98–99.
148 Quetelet et al., 'Notice of the Establishment of the Central Statistical Commission of Belgium.'
149 Ibid, 225.
150 Ibid, 225.
151 Ibid, 225.
152 Ibid, 225.
153 Ibid, 225.

familiar with the production of statistical data in their departments.[154] With this design, the CSC was expected to produce general statistics and to coordinate different governmental departments that produced statistics in specific fields. The proposal proclaimed, 'The great object of its labours will be to bring together in one common depository all the scattered information which is at present collected by the different departments of government.'[155] The *JSSL* further published another royal decree a year later, dated 20 October 1841, that defined the CSC regulations in twenty-three articles, the first of which defined the principal functions of the commission as '[t]o draw up a complete report of the Statistics of the country'.[156]

The CSC's main objective was to coordinate multiple governmental actors engaging in different branches of statistics, but it also contributed to establishing a channel between the local and the central. The 1841 regulations included Article Three, which allowed the CSC to create '[p]rovincial or local Commissions of statistics'.[157] In 1843, a special commission was created in every province to supervise the local production of statistical data and its transmission to the CSC in the capital.[158] The CSC mobilised those local commissions to gain local support for the execution of the Belgian census in 1846, the process which, as Randeraad claims, led to the national integration of Belgium.[159]

The proposal of the Belgian CSC and the SCPD reports shared common features. Both of them faced the absence of reliable statistical documents that cover all branches of government. Both reports accepted the existence of multiple governmental offices that produce statistical documents from their operation instead of promoting the creation of a single office that concentrated all the statistics-related tasks, such as in Bowring's plan.

The notable difference between the SCPD's conclusion and the Belgian CSC was that the CSC was designed to actively coordinate different offices in such a way as to create a 'unity and completeness' in official statistics.[160] In other words, the CSC aimed to coordinate the different interests of different offices to agree on a unified plan of statistical

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154 Ibid, 225.
155 Ibid, 225.
156 King of the Belgians Leopold, 'Royal Decree, Dated 20th Oct., 1841, for the Regulation of the Functions and Operations of the Central Statistical Commission of Belgium, Appointed by a Decree of 16th March, 1841,' *Journal of the Statistical Society of London* 5:2 (1842): 209–12.
157 Ibid, 210.
158 Randeraad, *States and Statistics in the Nineteenth Century*, 26–29.
159 Ibid, 28.
160 Quetelet et al., 'Notice of the Establishment of the Central Statistical Commission of Belgium,' 226.

data collection that would eliminate contradictory facts in official statistics derived from the use of different methods. The CSC's role included identifying necessary topics to be covered and unnecessary details to be removed;[161] providing examples to follow, such as the forms of returns and tables; and avoiding duplication of the same data.[162] In this arrangement, the statistical documents would confirm a uniform plan suggested by the CSC while different statistical departments would continue to publish separately.[163] It is important to note, however, that each department remained independent and held the right not to adopt the CSC's suggestion.[164]

This resulted in the CSC's scientific character. Liedts' proposal envisaged that 'a man of science, experienced in social economy, and accustomed to the arrangement of statistical details' should preside over the CSC to coordinate the administrative offices.[165] The wish was fully granted, and King Leopold appointed Quetelet, who was not only an eminent statistician but had also been the perpetual secretary of the Royal Academy of Belgium since 1834.[166] The Belgian royal decree of October 1841 allowed the CSC to receive assistance from 'scientific bodies or learned men' and enhanced the CSC's scientific character.[167]

The CSC's integration of science and administration attracted the SSL since scientific-administrative duality was, as the SSL saw it, an inherent nature of statistics. The 1849 SSL Council Report, quoted at the beginning of this section, discussed the Belgian CSC in relation to administrative organisations, including the SDBT. However, as I have discussed in Chapter One, the 1845 SSL Council Report also alleged a similarity between the Belgian CSC and the SSL as a scientific society. The SSL was pleased to find this supposed 'similarity' between the five chief sections of statistics that the SSL proposed in 1840 and the five divisions that the CSC created within itself for 'making a great statistical account of the kingdom'.[168] The SSL even suggested that the CSC could provide a model for the SSL's future operation, even though the SSL clearly did not belong to the government administration system.[169] The SSL observed that the CSC gave its 'first

[161] Ibid, 226.
[162] Leopold, 'Belgian Royal Decree 1841,' 210.
[163] Quetelet et al., 'Notice of the Establishment of the Central Statistical Commission of Belgium,' 226.
[164] Ibid, 226.
[165] Ibid, 225.
[166] For Quetelet's biography, see Introduction footnote 57.
[167] Leopold, 'Belgian Royal Decree 1841,' 210.
[168] 'Eleventh Annual Report of the Statistical Society of London,' *Journal of the Statistical Society of London* 8:2 (1845), 98–99.
[169] Ibid, 99.

attention to statistics, regarded in an administrative light, as collections of those facts only which the Government could procure and arrange' and that, at the same time, the CSC carefully defined the 'scientific purpose' of statistics as 'to embrace every well-ascertained social fact'.[170]

The SSL made the best use of its alleged similarities with the Belgian CSC in attempts to expand the SSL's activities. The SSL drew its fellows' attention to provincial statistical commissions created to assist the CSC.[171] The SSL presented the successful cooperation between the CSC and the provincial commissions in Belgium as a model to follow in Britain.[172] The SSL made an ingenious move and appealed to the rhetoric of the unique British liberal political culture where the private sector played a more important role than in the continent, which created room for the SSL to take the initiative.[173] As if it was the natural course of things, the SSL presented that they, as the leading non-governmental statistical organisation in Britain, should fill in the role of the CSC. Why not, asked the SSL, enjoy 'the advantages of a national co-operation in our labours, less regular, perhaps, in its form, than can be accomplished by ordonnances of the State, but possessed of greater vitality, because created by a common conviction of its value?'[174]

The SSL proposed to act as the central statistical organisation for consolidating isolated facts buried in local areas and translating those local facts to national facts. In British provincial cities, the SSL observed, statistical societies were formed to collect information regarding local conditions, but they soon became inactive following the completion of their investigation in their respective locality.[175] The SSL wondered what local statistical enthusiasts could have achieved if they had acted as members of 'local committees of a central Society'.[176] They could have conducted their local investigations 'with a nearer approach to uniformity' and produced 'results admitting of a more general comparison than can be made between those obtained without any reference to a common system of notation'.[177] The SSL hoped that local gentlemen, connected to local administrative, scientific, and other institutions, would recognise 'the scientific value of

[170] Ibid, 98.
[171] Ibid, 99.
[172] Ibid, 99.
[173] Similar idea could be found in Continent as Westergaard claims the privately-formed Saxonian Statistical Society assumed a public character and officially became a public statistical office in 1850. Harald Westergaard, *Contributions to the History of Statistics* (London: P. S. King & Son, 1932), 139–140.
[174] '1845 SSL Council Report,' 99–100.
[175] Ibid, 100.
[176] Ibid, 100.
[177] Ibid, 100.

local facts' that were initially collected 'only for local uses' and send them to the SSL as 'one national centre of publication' where they would 'always be able to ascertain the subjects which want yet further elucidation'.[178] With this view, the SSL recommended that provincial statistics enthusiasts form a union in their respective location as 'a local committee of the Statistical Society of London'.[179] With the help of the SSL, 'specific knowledge' collected by local committees would be united with 'general views'.[180] As is often the case with Victorian statistics, the SSL's grandiose plan did not succeed. Yet, the SSL's attempt was still important, as it illustrates why the Belgian CSC was so pertinent to statistical science and its conception of statistical fact.

The CSC was proposed to solve the same issues raised by the SCPD, which were the omission, contradiction, and overlap of facts across the statistical documents. The CSC aimed to coordinate ministerial interests with the supervision of a statistician and produce general and homogeneous statistical data, which should cover all specific branches of statistics and be collected in the same fashion across different government offices. It also dealt with the issue of isolated facts in provincial areas by establishing local commissions. With these measures, the CSC was supposed to create homogeneous national statistics. Its scientific-administrative duality appeared to be specifically relevant to the SSL. The large-scale collection of statistical data, as the SSL saw it, could be conducted only by the government, but the establishment of the CSC appeared to suggest that the SSL could fulfil the useful roles of coordinating multiple actors to produce statistical data. As I have discussed in Chapter Two, the idea of the SSL becoming a storage of statistical facts existed from its early stage and prompted the creation of the *JSSL*. The absence of a centralised general statistical office in Britain prompted the SSL to contemplate the possibility of becoming a national repository of statistical data. The SSL appeared to make a distinction between local and national interests, and the SSL proposed itself to become a central statistical society that would guide provincial statisticians' efforts to serve national, and local, interests. The idea might have been unrealistic and, perhaps unsurprisingly, unrealised. However, it illustrates the elasticity of the concept of a centralised statistical office and the role of scientific organisations in the accumulation of statistical facts. The latter leads to the next topic: the ISC.

5. International Statistical Congress

[178] Ibid, 100.
[179] Ibid, 100.
[180] Ibid, 100.

5-1. Pursuit of Uniformity

The ISC was an important statistical institution and deserves extensive scholarly attention in its own right. However, it is not possible, or necessary, to review all its contributions to the history of statistics in this chapter.[181] I focus on the ISC's endeavour of introducing uniformity in statistical data-gathering on both the national and international levels, which aimed to establish the comparability of statistical data across countries. The ISC's efforts included attempts to standardise statistical classifications and practices of data-gathering. What is particularly relevant to this chapter is the ISC's advocacy of the adaption of the CSC or a similar centralised statistical body in each nation. The Belgian CSC's positive reception abroad was not achieved solely by Quetelet's scientific esteem and his personal charm but also by his systematic promotion of the CSC's model through the ISC, which Quetelet himself founded. In this section, I will review how the ISC disseminated the CSC across European countries and analyse how British statisticians took advantage of the ISC's resolutions to promote the reform of national statistics in Britain.

The very idea of the ISC was proposed during the meeting of the Belgian CSC on 11 July 1851. Quetelet and Auguste Visschers presented the idea before the members of the Belgian CSC, who then agreed to send both men to the Great Exhibition in England to conduct further discussions with statisticians abroad.[182] Although Quetelet could not make this journey due to illness, Visschers went to London as planned and privately discussed the matter with French economists Horace Say and Joseph Garnier and with prominent members of the SSL, including Farr, Porter, and Joseph Fletcher.[183] The positive reaction from the foreign experts prompted the Belgian CSC in its decision to hold the ISC on its home ground in Brussels. The first meeting was held in 1853, and another eight meetings followed in various European cities.[184] Shortly after Quetelet's death in 1874, however, the ISC collapsed, and the final congress was held in Budapest in 1876.

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[181] The best overview is given by the following works. Randeraad, *States and Statistics in the Nineteenth Century*; Nico Randeraad, 'The International Statistical Congress (1853—1876): Knowledge Transfers and Their Limits,' *European History Quarterly* 41:1 (2011): 50–65. See also, Westergaard, *Contributions to the History of Statistics*, Ch. 14. and Martin H. Geyer, 'One Language for the World: The Metric System, International Coinage, Gold Standard, and the Rise of Internationalism, 1850-1900,' in *The Mechanics of Internationalism: Culture, Society, and Politics from the 1840s to the First World War*, ed. Martin H. Geyer and Johannes Paulmann (Oxford: Oxford University Press, 2001).

[182] Randeraad, *States and Statistics in the Nineteenth Century*, 15.

[183] Ibid, 16.

[184] Quetelet suffered a stroke in 1855 and had to skip the second meeting in Paris. Ibid, 1.

Table 1: List of ISC Meetings

ISC	Year	Place
1st Meeting	1853 September	Brussels
2nd Meeting	1855 September	Paris
3rd Meeting	1857 July	Vienna
4th Meeting	1860 July	London
5th Meeting	1863 September	Berlin
6th Meeting	1867 September/October	Florence
7th Meeting	1869 September	the Hague
8th Meeting	1872 August	St Petersburg
9th Meeting	1876 September	Budapest

Before I examine the ISC's activities in detail, it should be noted that an international scientific congress was still a novelty when the first ISC was held.[185] There is little consensus regarding exactly when in history the practice of convening an international scientific congress started. Crawford names the Karlsruhe Congress in 1860, an international conference for chemistry, as one of the first of this kind and, then, lists other conferences that followed, such as those on botany and horticulture in 1864, geodesy in 1864, astronomy in 1865, pharmaceutical sciences in 1865, meteorology in 1873, and geology in 1878.[186] However, it could be traced back further, as there was the International Sanitary Conference in Paris in 1852 and the Congress on Hygiene and Demography in Brussels in 1852, although whether those conferences count as international scientific congresses depends on the definition of the term. For the purpose of this section, it is sufficient to note that, while international scientific conferences became increasingly common by the end of the nineteenth century, this was not so in the 1850s.[187]

From the first meeting to the last, the SSL and British statisticians were important participants in the ISC. Delegates from both the SSL and British government attended all nine meetings. For all the meetings, the SSL published the British delegates' accounts of its proceedings in the *JSSL*.

[185] Ibid, 10.
[186] Elisabeth Crawford, *Nationalism and Internationalism in Science, 1880-1939: Four Studies of the Nobel Population* (Cambridge University Press, 2002), 39.
[187] Robert Fox, *Science without Frontiers : Cosmopolitanism and National Interests in the World of Learning, 1870-1940* (Corvallis: Oregon State University Press, 2016), 18–19.

Leoni Levi,[188] attended the first meeting in Brussels and published a summary of the ISC's discussions in the *JSSL*. Levi clearly defined the ISC's purpose in the title of his report: 'Résumé of the Statistical Congress, Held at Brussels, September 11th, 1853, for the Purpose of Introducing Unity in the Statistical Documents of All Countries'.[189] As his wording suggests, the ISC aimed to deal with the perpetual issue of disorder among published statistical documents, while, this time, the issue was discussed before an international audience. Levi maintained that the purpose of collecting statistical data conducted in many countries was to reveal defects in certain systems of government by comparing them with other systems.[190] However, the lack of uniformity in 'the forms and language of statistical documents' published by different countries, he observed, compromised international comparability of statistical data.[191] The Statistical Congress was formed to resolve this issue and establish cooperation among all nations.[192]

As I discussed earlier, the CSC was designed to establish a central-provincial link at the national level. The ISC was more ambitious than that and was designed to be international, which was, as Levi observed in his report, in accordance with the nature of statistics conceived as a 'cosmopolitan science'.[193] He reminded his readers that Brussels was a particularly fitting place for discussing scientific cooperation across national borders.[194] Being a small neutral country recently separated from the Netherlands, Belgium's capital provided a forum for international cooperation without stimulating destructive rivalry among nations.[195] In particular, Levi drew his readers' attention to the 'Meteorological Congress', by which Levi most likely referred to the International Maritime Conference held in Brussels immediately before the ISC and also presided over by Quetelet.[196] As several historians have indicated, Quetelet's idea for international cooperation in

[188] Leone Levi was a political economist, professor of commercial law at King's College, London, and active member of the SSL. He contributed more than fifteen articles to the *JSSL*. For his entry in the *ODNB*, Rubin, G. R. 2004 'Levi, Leone (1821–1888), jurist, political economist, and statistician.' *Oxford Dictionary of National Biography*. [16 Oct. 2018]

[189] Leone Levi, 'Résumé of the Statistical Congress, Held at Brussels, September 11th, 1853, for the Purpose of Introducing Unity in the Statistical Documents of All Countries,' *Journal of the Statistical Society of London* 17:1 (1854): 1–14.

[190] Ibid, 1.

[191] Ibid, 1.

[192] Ibid, 1.

[193] Ibid, 1.

[194] Ibid, 2.

[195] Fox, *Science without Frontiers*, Ch. 1.

[196] Levi, 'Résumé of the International Statistical Congress in Brussels,' 2. Frank Hamilton Hankins, *Adolphe Quetelet as Statistician* (New York, 1908), 25.

statistical data-gathering was inspired by his experience of international cooperation in astronomical and meteorological observations as the director of the Brussels Observatory.[197] The inherent association among those sciences was also evident to Quetelet's contemporaries, without the hindsight of historians. John Herschel, one of Quetelet's close friends and an astronomer himself, wrote in 1850 to the effect that Quetelet was a champion of international data collection crossing geographical boundaries and accumulating over time in various fields, including meteorology and statistics.[198] Likewise, Levi, who attended the first ISC in 1853, recognised the similarity between the ISC and the International Maritime Conference.[199] The Maritime Conference was convened for, as Levi summarised, 'the purpose of concerting a systematical and uniform plan of meteorological observation at sea', and as he saw it, the ISC aimed to achieve the same goal for statistics.[200]

Levi described, in detail, the ISC's various attempts to arrive at uniform methods of collecting data. As the organiser of the ISC, the Belgian CSC reviewed the census systems in different countries and presented the discrepancies found among the different systems in terms of their methods, timing, and intervals.[201] Even the apparently straightforward concept of population caused discrepancies.[202] While Britain and Belgium preferred to count the actual population through the census, German states and France used a mixture of actual and legal populations calculated from the registration of legal residence.[203] In the end, the ISC recommended that the census should count the number of individuals actually living in the country, it should be conducted in December, the interval should be no more than ten years, agents should be employed specifically for this purpose, and the census schedule should be returned for each family or household.[204] As Randeraad's work

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[197] For Quetelet's passion for international cooperation in observation, see Hankins, *Adolphe Quetelet as Statistician*, 19–27. Kevin Donnelly, *Adolphe Quetelet, Social Physics and the Average Men of Science, 1796–1874* (London: Routledge, 2015), Ch. 3 and Ch.4. Quetelet argued for the need of uniformity in meteorological observation and said: 'Above all, both the savant and the nation itself should abandon the notion of individuality.' Quoted in Katharine Anderson, *Predicting the Weather: Victorians and the Science of Meteorology* (Chicago ; London: University of Chicago Press, 2005), 83.

[198] Cited in Lawrence Goldman, 'The Origins of British 'Social Science': Political Economy, Natural Science and Statistics, 1830-1835,' *The Historical Journal* 26:3 (1983), 602. The original article is [John Herschel], 'Quetelet on Probability,' *The Edinburgh Review* 92:185 (July 1850), 14.

[199] For the connection between two international conferences, see Donnelly, *Adolphe Quetelet*, 17, 162.

[200] Levi, 'Résumé of the International Statistical Congress in Brussels,' 2.

[201] Ibid, 4–5. Randeraad, *States and Statistics in the Nineteenth Century*, 29–30.

[202] Levi, 'Résumé of the International Statistical Congress in Brussels,' 5. Randeraad, *States and Statistics in the Nineteenth Century*, 29–30.

[203] Randeraad, *States and Statistics in the Nineteenth Century*, 29–30. Westergaard, *Contributions to the History of Statistics*, 177.

[204] Levi, 'Résumé of the International Statistical Congress in Brussels,' 5. Randeraad, *States and Statistics in the Nineteenth Century*, 29–31.

shows, the adoption of a uniform system for statistical purposes was easy to state but difficult to achieve.[205] Although the Belgian CSC originally proposed that all countries should conduct a census every ten years starting December 1860, Karl Friedrich Wilhelm Dieterici, the Prussian delegate, opposed the suggestion, as he was convinced of the superiority of the three-year interval adopted in the German states.[206] A concession was made, and the finalised resolution recommended a census be conducted at a ten-year interval or more frequently.[207] Another important topic was a uniform statistical classification of diseases. Levi reported that the need was felt for 'a uniform nomenclature of diseases equally applicable to all countries', but the plan was referred to future congresses.[208] At the second meeting in Paris, the ISC discussed the possibility of adopting a uniform unit of weight and measurement and a common language as well as a common statistical classification of diseases.[209]

5-2. Statistical Organisation as an Institution of Securing Uniformity

The organisation of the ISC highlighted the importance of governments in statistics. The Brussels meeting was prepared by the Belgian CSC and presided over by the Belgian Minister of the Interior.[210] Official delegates represented more than twenty governments.[211] Farr represented the British government and was elected one of the vice presidents of the Brussels meeting.[212]

The ISC regarded each country's government statistical office as instrumental in the pursuit of uniformity in statistical data across countries. A delegate from each government was asked to report to the rest of the attendants the organisation of government statistics in their home country.[213] The reports made it clear that the system of producing and arranging statistical documents varied greatly from one country to another.[214] The ISC

[205] Levi, 'Résumé of the International Statistical Congress in Brussels,' 5. Randeraad, *States and Statistics in the Nineteenth Century*, 29–35.
[206] Randeraad, *States and Statistics in the Nineteenth Century*, 30–31.
[207] Levi, 'Résumé of the International Statistical Congress in Brussels,' 5. Randeraad, *States and Statistics in the Nineteenth Century*, 31.
[208] Levi, 'Résumé of the International Statistical Congress in Brussels,' 5.
[209] Leone Levi, 'Résumé of the Second Session of the International Statistical Congress Held at Paris, September, 1855,' *Journal of the Statistical Society of London* 19:1 (1856), 9–10. Randeraad, *States and Statistics in the Nineteenth Century*, 52–53.
[210] Levi, 'Résumé of the International Statistical Congress in Brussels,' 3.
[211] Ibid, 3.
[212] Ibid, 3.
[213] Randeraad, *States and Statistics in the Nineteenth Century*, 13.
[214] Ibid, 13.

provided an opportunity for the official delegates to reflect on their system of government statistics in comparison to each other and to discuss what type of organisation a statistical office should be. To discuss the matter further, the Belgian CSC dedicated the first section of the Brussels meeting to the topic of the statistical organisation, or 'Organisation de la statistique'.[215]

Levi summarised the system of a statistical office in European countries and located Britain's relative position in Europe. The official delegates' accounts of their statistical organisations made him realise that the majority of principal countries in Europe have 'general statistical departments', while in other countries, various governmental departments collected statistical data independently.[216] England was, as Levi saw it, in the latter group.[217] He acknowledged the endeavour of the SDBT to function as a general statistical office, but he concluded that its function was limited and its statistical documents lacked uniformity.[218]

Levi pointed out the ISC's discussion regarding the statistical organisation was in line with the congress' ultimate goal to establish comparability among statistical data.[219] Uniformity in modes of both collecting and publishing official statistics needed to be achieved by deciding the common nomenclature and simplifying the statistical tables suitable for comparison, for implementing those steps in each country would require a statistical organisation.[220] Levi summarised the ISC's discussion and wrote:

> The best instrumentality for the accomplishment of such an object [the adoption of a general basis] is the creation, in each state, of a central statistical commission, or an analagous [sic] institution formed of the heads of the administration with the addition of some individuals eminent in statistical science, the central commission communicating with branch commissions in the provinces for all that is local or provincial. The central statistical commissions of all countries might be in constant communication among themselves, exchange their publications, and also transmit to each other the schedules used for the collection of information, so that they may be classified and organized.[221]

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[215] Ibid, 16. Belgique Commission Centrale de Statistique, *Compte Rendu Des Travaux Du Congrès Général de Statistique Réuni à Bruxelles Les 19, 20, 21 et 22 Septembre 1853, Bruxelles* (Brussels: Hayez, 1853), 4. Also, see Westergaard, *Contributions to the History of Statistics*, 175.
[216] Levi, 'Résumé of the International Statistical Congress in Brussels,' 3.
[217] Ibid, 3.
[218] Ibid, 3–4.
[219] Ibid, 4.
[220] Ibid, 4.
[221] Ibid, 4. [] is inserted for clarification.

The parallelism between the Belgian CSC and the proposed Central Commission is unmistakable. The Central Commission was to coordinate the head of different ministries and, at the same time, bridge the geographical divide between the centre and the provinces, the very same task that the Belgian CSC was expected to achieve. A notable divergence from the Belgian CSC was that the ISC's model appeared to be organised in view of international collaboration. The ISC envisaged that the CSCs in each country should be basic national units of international statistical cooperation and should be in constant communication with each other.

With a view towards avoiding a potential conflict with the existing bureaucracy in each country, the ISC conceded that the governments were not required to create an exact imitation of the proposed CSC as the centralised statistical organisation. The CSC could alter the extant administrative boundaries, as it was a transministerial and transregional organisation in nature, designed for homogenising the production and publication of statistical data, with no immediate administrative purpose.[222] Dieterici, the delegate of Prussia, was, again, sceptical about the suggestion from the Belgian CSC.[223] The Prussian situation was different from that in France, Belgium, and England because, Dieterici observed, the head of the Prussian Statistical Office had already integrated science and government without the support of the CSC.[224] The integration was embodied in the dual roles that Dieterici performed as the director of the Prussian Statistical Office and a professor of political science (*Staatswissenschaft*), a combination in which he succeeded from his predecessor, Johann Gottfried Hoffmann.[225] Allowing for such differences in opinion, the ISC's resolution did not specify the exact form of a central organisation of statistics, but it resolved that each country should have a central body, or individual, to whom one could inquire regarding statistical documents in that country.[226]

Unlike Dieterici, Levi welcomed the idea of a CSC and urged British statisticians to follow the ISC's resolution. However, he took advantage of the loose wording in the

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[222] Randeraad, *States and Statistics in the Nineteenth Century*, 31–32.
[223] Ibid, 32.
[224] Ibid, 32.
[225] Ian Hacking, 'Prussian Numbers 1860-1882,' in *The Probabilistic Revolution Vol. I: Ideas in History*, ed. Lorenz Krüger, Lorraine Daston, and Michael Heidelberger (Cambridge, MA: MIT Press, 1987), 380.
[226] Prévost and Beaud provides the English translation of the resolution: 'To provide unity to the official proceedings, we must bring them back to a common centre; it is necessary that the principal officials responsible for drafting the different branches of the general statistics, can meet and work together, that they admit the same divisions, that they adopt, after careful review, the same terms and the same numbers to represent the same objects, that they leave no gap in the general tables, and avoid, on the other hand, duplication of effort. The surest way to achieve this desired unity seems to be the creation, for each state, of a central commission of statistics, or any similar institution, composed of representative key departments.' Cited in Prévost and Beaud, *Statistics, Public Debate and the State, 1800-1945*, 57

resolution and claimed that the SSL could function as a central statistical organisation.[227] Like the SSL Council in 1845, Levi appealed to the rhetoric of the unique British political culture in which voluntary associations assumed more public functions than in other countries.[228] He insisted that the SSL should consolidate and digest statistical documents issued from the departments of the British government for the use of statisticians abroad.[229] Moreover, the SSL should take advantage of its location in 'the centre of the metropolis of the commerce of the world' and should be a 'depositary of the statistical information from all countries'.[230] However, Levi's ambitious idea of the SSL functioning as the central statistical organisation in Britain, let alone the world, did not become a reality.

The mode of a statistical organisation continued to be an important topic during the second ISC meeting, held in Paris in 1855.[231] The discussion was led by Karl von Czoernig, the delegate from Austria and the future chairman of the Austrian CSC (*Statistische Znetrallkommission*), to be established in 1863.[232] Czoernig had been reviewing the development of a statistical organisation since the first meeting. Despite the resolution of the Brussels meeting that called for the creation of a central statistical organisation in each country, he found that only a few countries had central statistical offices and even the functions of those existing offices were generally limited.[233] Czoernig was concerned with the lack of a central organisation in England and France, both of which were avid collectors of statistical information. Although both accumulated a large amount of data, their statistical data, he observed, lacked uniformity due to the absence of a proper statistical organisation.[234] To deal with the disarray of national statistics, Czoernig again urged his colleagues at the ISC to introduce the CSC model in their home country.[235]

The SSL again chose Levi to relay the news to a British audience through his account of the Paris meeting and to cover the ISC's discussion regarding a statistical organisation.[236] The Paris meeting resolved, Levi reported, that the CSC should be established in all

[227] Levi, 'Résumé of the International Statistical Congress in Brussels,' 14.
[228] Ibid, 14.
[229] Ibid, 14.
[230] Ibid, 14.
[231] Randeraad, *States and Statistics in the Nineteenth Century*, 51–52.
[232] Ibid, 77.
[233] Ibid, 52.
[234] Ibid, 52.
[235] Ibid, 52.
[236] Levi, 'Résumé of the International Statistical Congress in Paris.'

countries 'as the best means for improving and systematizing National Statistics'.[237] The British situation was far from this goal, he observed, as no action had been taken to realise a central statistical organisation in Britain even after the ISC's resolution in Brussels.[238] In fact, Levi saw little prospect of advancement in this direction. To support his unfavourable estimation, he cited a recent government report, published in 1854, that inquired into public offices. The report read:

> We consider that the several departments of Government should collect the statistical information which is connected with their own business, and that each should publish it separately, but in a form harmonising with that adopted by the others. ... The Board of Trade having had great experience and acquired much skill in the management of statistics, might also, we think, usefully be employed in communicating with the other departments for the purpose of securing uniformity of action and for suggesting improvements or additions to the published accounts.[239]

The report apparently recognised the need for homogenising statistical documents published by the British government. However, it rather casually expected the SDBT to harmonise all the statistical publications while the government departments were allowed to publish statistical documents on their own. It was, in Levi's opinion, impossible for the current organisation of the SDBT to achieve that task.[240] To implement uniformity among those documents, he argued, the SDBT should be significantly extended with the accordance of the ISC's recommendation.[241] He envisaged that the future SDBT would include representatives of all government departments and also 'some individuals eminent in statistical science'.[242]

Levi referred to the discussion at the Paris meeting to support the reform of a statistical organisation in Britain and cited Czoernig's claim that statistics would have little scientific or administrative value without a department dedicated specifically to statistics.[243] The lack of such a department, Levi continued, would cause a practical obstacle for public administrators' capacity to identify relevant statistical data in other departments, as they had to locate the data 'from many offices in tables drawn up

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237 Ibid, 3.
238 Ibid, 3.
239 *Reports of Committees of Inquiry into Public Offices and Papers Connected Therewith*, UK Command Papers, 1854, (1715), 148. Cited in Levi, 'Résumé of the International Statistical Congress in Paris,' 3. See also, Cullen, *The Statistical Movement*, 25.
240 Levi, 'Résumé of the International Statistical Congress in Paris,' 3.
241 Ibid, 3.
242 Ibid, 3–4.
243 Ibid, 4.

according to plans altogether different, and having no relation among themselves'.[244] Levi summarised Czoernig's report and concluded that the only way to resolve this issue was 'the *centralisation* of the labours of all the departments'. [245]

In this type of 'centralisation', Levi reserved a crucial place for a statistician as a coordinator among specialists. A statistician, Levi imagined, would work with 'all the branches of administration', listen to the men who had knowledge and experience in a 'particular branch of the public service', and receive assistance from the men of science as well as of industry and commerce who were deeply versed 'in the secrets of their occupation'.[246] Statisticians may not have such intimate knowledge of specific topics, and yet, Levi believed, they could lay the 'foundation of true statistics', which would support the development of administration and science and the welfare of humanity.[247] Levi's description suggested that statistics was considered as a science to produce general knowledge by coordinating and interrelating all the fields of specific knowledge in administration, science, and industry.

Levi's argument suggests that he regarded individuals' specialisation in separate fields as unavoidable and even beneficial because this would develop a deeper knowledge in each field. He believed that specialisation did not have to result in the partitioning of data by specialised fields, as a central statistical organisation could integrate the resulting fragments of data into its entirety.

However, Levi noticed a deeper issue that might hinder the production of general statistics. In his account of the second ISC meeting, Levi defined the role of the ISC as 'the establishment of a complete body of national statistics' in all countries.[248] He then made an important distinction between two qualities that national statistics should have: national statistics should 'not only be complete in the items of information, and scientifically classified, but so prepared as to be comparable among themselves'.[249] This distinction suggests an assumption by Levi that statistical data could cover every field and be collected scientifically yet still lack comparability.

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[244] Ibid, 4.
[245] Ibid, 4. Emphasis in original.
[246] Ibid, 4.
[247] Ibid, 4.
[248] Ibid, 2.
[249] Ibid, 2.

Levi's implication can be fully understood by reading his comments on statistical classifications of disease that were discussed during the Paris meeting, as he discussed the possibility of equally scientific but contradicting statistical classifications. Farr, the statistical superintendent at the GRO, had already made a statistical classification of disease for the GRO with a view towards recording a cause of death in the registration of death.[250] It was well received in his homeland and even abroad, although there were some critics, including Marc d'Espine of Geneva.[251] Farr submitted his system for consideration for international use at the second ISC meeting in the hopes that his system of classification would introduce uniformity in population statistics across countries. However, at the same meeting, his critic d'Espine also submitted his own system, which was very different from Farr's. The winner of the contest was not decided at the Paris meeting.[252] Levi summarised the difference between the two systems, which was that d'Espine's system adopted the duration of disease as a key factor and made a distinction between acute and chronic diseases while Farr's followed a more conventional distinction between 'epidemic' and 'sporadic' diseases.[253] Levi argued that different classifications were formed from different interests, as d'Espine's classifications 'would be useful in medical jurisprudence' while Farr's had 'a more direct reference to sanitary science'.[254] In other words, Levi suggested that incommensurable differences in interests behind statistical data-gathering could produce incommensurable classifications.

Levi also suspected that these genuine differences of interests were partially to blame for the apparent unnecessary detail in statistical documents. In his account of the Brussels meeting, he noted the great difficulty in 'obtaining information from foreign governments' due to the lack of knowledge regarding 'what is actually published in other states and through what medium it may be ascertained'.[255] However, he also mentioned the issue regarding the bulkiness of statistical documents. It hurt the accessibility of those documents not only by increasing the price of publications but also by burying important

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[250] John M. Eyler, *Victorian Social Medicine: The Ideas and Methods of William Farr* (Baltimore ; London: Johns Hopkins University Press, 1979), 53. For Farr's classification and his work in the GRO, see also Simon Szreter, *Fertility, Class and Gender in Britain, 1860-1940*, (Cambridge: Cambridge University Press, 1996), 85–92. Simon Szreter, *Health and Wealth: Studies in History and Policy*, (Rochester, NY: University of Rochester Press, 2005), 251–263.

[251] Eyler, *Victorian Social Medicine*, 53–55.

[252] During the next meeting in Vienna, there were even two more proposals for the list of diseases: a compromise list of Farr's and d'Espine's, and a new list submitted by the Vienna preparation committee. See Randeraad, *States and Statistics in the Nineteenth Century*, 73.

[253] Levi, 'Résumé of the International Statistical Congress in Paris,' 8.

[254] Ibid, 7–8.

[255] Levi, 'Résumé of the International Statistical Congress in Brussels,' 4.

information in 'the amount of particulars, chiefly of local interest'.[256] His criticism suggests that the failure in translating local interest to general interest was the cause of publishing apparently unnecessary detail.

5-3. National Statistics and International Statistics

The ISC aimed to introduce comparability in statistical data separately collected by various countries, as it appeared unrealistic to expect a single organisation to conduct statistical data-gathering in every country and produce homogeneous international statistical data. From this perspective, the possibility of creating comparable international statistics hinged on whether each country could homogenise respective national statistics. In order to introduce unity into national statistics, the ISC recommended that participating countries build a CSC or similar organisation in each country. In this sense, the ISC was nationalising statistics as well as internationalising it. As may also be the case in other European countries, the ISC offered an opportunity for British statisticians to compare and evaluate the system of British statistics against a model provided by the ISC. The ISC's 1861 London meeting provided statisticians and statistics enthusiasts in Britain a perfect opportunity to openly discuss issues in British statistics.

At the second ISC meeting in Paris, British delegates expressed their desire to host the next meeting in London. However, the ISC preferred a German city, and eventually, Vienna was chosen to host the third meeting.[257] During the Vienna meeting in 1857, Farr, representing the British government, again offered to host the next meeting in the British capital, which was granted this time.[258] Samuel Brown,[259] reporting the proceedings of the third meeting in the *JSSL*, seized the opportunity to advocate the introduction of a better statistical organisation. He urged the British audience to 'set our house in order' and 'bring under some special government department the publication of the valuable,

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[256] Ibid, 4.
[257] Randeraad, *States and Statistics in the Nineteenth Century*, 61.
[258] Samuel Brown, 'Report on the International Statistical Congress, Held at Vienna, September, 1857,' *Journal of the Statistical Society of London* 21:1 (1858), 12. For an official invitation in French, see Appendix B of the same report.
[259] Samuel Brown was an actuary. He was an active member of the SSL and also a founding member of the Institute of Actuaries, which had, as I will discuss in Chapter Four of this thesis, a strong tie with the SSL, as the Institute of Actuaries used the SSL's building as a meeting place and participated in the SSL-led 'Scientific House' project. He contributed more than ten articles to the *JSSL*. For his *ODNB* entry, see Walford, Cornelius. 2007 'Brown, Samuel (1811–1875), actuary and statistician.' *Oxford Dictionary of National Biography*. [accessed on 17 Oct. 2018]

but incongruous statistical documents'.[260] In Britain, the public interest in statistics was so ardent, Brown insisted, that Britain had accumulated larger amounts of data than any other country.[261] In the methods of statistical data-gathering, a great improvement was made by both governmental and private organisations, such as the SSL.[262] The only thing lacking in British statistics was, Brown argued, 'unity, harmony, combination in the labours of individuals, and in the Statistical Reports of the Government.'[263]

The need for a centralised statistical organisation in Britain was again discussed during the London meeting. The meeting was opened by Prince Albert[264] at the Great Hall of King's College, the adjacent building to Somerset House, on 16 July 1860.[265] Albert was no stranger to statistics, as he received private tutoring from Quetelet as a young prince.[266] Albert also had been a patron of the SSL since 1840 and personally attended one of its ordinary meetings in 1842.[267] According to Goldman, it was Quetelet who persuaded Albert to assume the presidency of the London meeting.[268] Albert gave a passionate address to advocate for the cause of the ISC and Britain's duty to cooperate with it.

Albert highlighted that statistics should serve the general interest. At the beginning of his address, he asked whether the ISC was a 'private' meeting, as opposed to a 'public' one.[269] The distinction was pertinent to why it was Albert instead of a minister of the British government who should assume the presidency and what interest the ISC should represent.[270] Albert claimed that, in Britain, the questions of national interest must be discussed in public with the participants 'from the highest to the lowest'.[271] He continued

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[260] Brown, 'Report on the Third International Statistical Congress,' 12.
[261] Ibid, 12.
[262] Ibid, 12.
[263] Ibid, 12.
[264] Prince Albert was a prince of Saxe-Coburg and Gotha and married to Queen Victoria. His interest in statistics and the SSL is explained in the following sentences. For his *ODN*B entry, see Weintraub, Stanley. 2012 'Albert [Prince Albert of Saxe-Coburg and Gotha] (1819–1861), prince consort, consort of Queen Victoria.' Oxford Dictionary of National Biography. [accessed on 17 Oct. 2018]
[265] 'The Address of the Prince Consort on Opening as President the Fourth Session of the International Statistical Congress,' *Journal of the Statistical Society of London* 23:3 (1860): 277–85. Farr apparently helped Albert write the address. See, Randeraad, *States and Statistics in the Nineteenth Century*, 81.
[266] For Quetelet's tutoring to Albert, see Harriet H. Shoen, 'Prince Albert and the Application of Statistics to Problems of Government,' *Osiris* 5 (1938): 276–318. Also, see Goldman, 'Statistics and the Science of Society,' 427.
[267] For Albert's patronage to the SSL, see Royal Statistical Society, *Annals of the Royal Statistical Society, 1834-1934* (London: Royal Statistical Society, 1934), 63.
[268] Goldman, 'Statistics and the Science of Society,' 427.
[269] 'Opening Address of Prince Albert as President of the International Statistical Congress,' 277. For Albert's address, see also Randeraad, *States and Statistics in the Nineteenth Century*, 81–83.
[270] 'Opening Address of Prince Albert as President of the International Statistical Congress,' 277.
[271] Ibid, 277.

to say that the ISC could be 'a private meeting of the delegates of different Governments, discussing special questions of interest' to them alone or of 'a public and a national character, addressing itself to the public at large, and inviting its co-operation'.[272] The British government decided that the London meeting should serve the general interest of the public rather than the specialised interest of government bureaucracy.[273] Although Albert was clearly a non-specialist, he was comfortable assuming the presidency because he represented the British nation as a whole.[274] His emphasis on the public nature of statistics suggests that he opposed a narrow idea of statistics defined as specialised knowledge to be handled and comprehended only by a specific group of people with specialised skills.

Although Albert envisaged that statistics should serve the public, it was not yet the reality in Britain. Covering Albert's address at the ISC meeting, *The Times* pointed out that political questions in Britain were decided by anything but 'dry statistics'.[275] Albert himself was aware that statistics were not accepted in public discussions, as much as he believed they should be. Distrust in statistics was commonplace, which, Albert observed, derived from three sources: lack of credibility, appearance of an imperfect science, and association with pantheism. Although the last point would be important in relation to Albert's rebuttal against statistical fatalism, which was popularised by Henry Buckle's *History of Civilization in England* published in 1857, only the first two issues are directly relevant to this chapter.[276] Albert observed that statisticians abstained from baseless speculation 'for the purpose of protecting the purity and simplicity of its sacred task—the accumulation and verification of facts', which inadvertently made statistics appear to be an imperfect science that had to be completed with the help of natural and political sciences.[277] Moreover, Albert observed, people too often had to witness political figures throwing contradictory statistical numbers at each other to support their respective views, which created distrust in statistics altogether.[278] The ISC was expected to clear these suspicions of statistics and help people appreciate the true value of statistics.

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[272] Ibid, 277.
[273] Ibid, 278.
[274] Ibid, 278.
[275] *Times* 17 July 2018, page 9. Cited in Randeraad, *States and Statistics in the Nineteenth Century*, 83–84.
[276] See Ibid, 82. For Buckle's statistical fatalism and its importance in the history of statistics, see Hacking, *The Taming of Chance*, Ch. 14 and Ch. 15. Theodore M. Porter, *The Rise of Statistical Thinking, 1820-1900* (Princeton, N.J: Princeton University Press, 1986), 162–171.
[277] 'The Address of the Prince Consort on Opening as President the Fourth Session of the International Statistical Congress,' 279–280.
[278] ''Ibid, 279.

Albert claimed that the ISC was instrumental in advancing international cooperation in statistics and reaping the fruits of statistics, as national statistics collected in isolation of other countries would reveal very little. To reveal the 'law' that governs the world, statisticians must accumulate 'large numbers of observations' that must embrace all branches of society and be thoroughly conducted for each field.[279] Albert further claimed that the complete statistical investigation of one nation would not suffice to learn 'the varying influences of political and religious conditions, of occupation, races, and climates', as the 'same classes of facts in different countries' and 'the same classes of facts in the same localities and under the same conditions, but at different times' must be known as well.[280] However, even the collection of facts under different classes, localities, and times was insufficient for a complete comparison, as it should require the data to be collected and expressed in the same fashion.[281] The conditions would be impossible to achieve without the ISC, which was established to form 'an agreement among different Governments and Nations to follow up these common inquiries, in a common spirit, by a common method, and for a common end'.[282] Albert hoped that the ISC would lay a basis for general and international statistics beyond local interests. He reminded his audience not to lose themselves in 'points of minute detail'.[283] Albert admitted those details could be attractive for 'their intrinsic interest and importance', but he tried to persuade the delegates from various countries that they should pay undivided attention to collectively establishing the 'broad principles' on which the 'common action of different nations' could be based.[284]

After reviewing and endorsing the ISC's ideal, Albert drew the attention of his audience to the disappointing situation of statistical organisations in Britain. Albert observed that, while the majority of participating countries carried out the recommendations of the Brussels meeting, he was 'sorry to have to admit the existence of some striking exceptions in England in this respect'. Despite repeated criticism from British statisticians, Britain still lacked a central organisation. Albert lamented:

> …nor, while we are in all the departments of the State most actively engaged in the preparation of valuable Statistics, can we deny certain defects in our returns, which must be traced to the want of such a central authority or commission as was recommended by the Congress at Brussels and Paris, to direct on a general plan all the great Statistical operations to be prepared by the various departments.

[279] Ibid, 281–282.
[280] Ibid, 282.
[281] Ibid, 282.
[282] Ibid, 281.
[283] Ibid, 284.
[284] Ibid, 284.

> Such a commission would be most useful in preparing an annual digest of the Statistics of the United Kingdom, of our widely-scattered Colonies, and of our vast Indian Empire.[285]

Albert was not the only one who took advantage of the London meeting to promote the establishment of a centralised statistical organisation. After the closing of the ISC in London, two articles appeared in the *Economist* and then were reproduced in the *JSSL*.[286] Those articles were anonymously written and just signed 'N', but for those who were familiar with British statistics, it was not difficult to identify the author as the editor of the *JSSL*, William Newmarch, who later publicly acknowledged his authorship at one of the SSL meetings.[287] In those articles, Newmarch envisaged a new centralised organisation, but his plan was more thorough than Albert's.

For Newmarch, statistics was the basis of social science. He claimed that statistics was to social science what experiments were to natural science because both statistics and experiments provide scientific data, which could liberate sciences from baseless speculation.[288] The major difference between statistics and experiments was that, while natural science had adopted experiments three hundred years ago and accumulated solid and comprehensive knowledge, social science was still in its infancy.[289] As Newmarch saw it, the ISC was the first step in the right direction to procure 'scientific data' for social science through uniform statistical observation across countries.[290]

To facilitate the ISC's progress, Newmarch offered a few suggestions for improvements regarding the organisation of the ISC. He started with a comparison between the ISC and the BAAS. The ISC appeared to Newmarch as an example of periodic scientific gatherings that changed its venue every time, which was, he insisted, 'one of the useful and successful innovations of recent years' initiated by the BAAS.[291] Another common feature between the two institutions was their adoption of the 'sectional principle'.[292]

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[285] Ibid, 283.
[286] *Economist* 4 August 1860 and 11 August 1860. 'Some Observations on the Present Position of Statistical Inquiry, with Suggestions for Improving the Organization and Efficiency of the International Statistical Congress,' *Journal of the Statistical Society of London* 23:3 (1860): 362–69.
[287] James T. Hammack, 'Report to the Statistical Society on the Proceedings of the Fourth Session of the International Statistical Congress, Held in London, July, 1860,' *Journal of the Statistical Society of London* 24:1 (1861), 21n.
[288] 'Some Observations on the Present Position of Statistical Inquiry, with Suggestions for Improving the Organization and Efficiency of the International Statistical Congress,' 363–364.
[289] Ibid, 363–364.
[290] Ibid, 364, 366.
[291] Ibid, 366.
[292] Ibid, 366–367.

While each gathering attracted a large group of people as a whole, it was divided into smaller sections that were dedicated to a specific branch of knowledge and moderated by a few eminent people in the field.[293] Those specialised divisions gave participants an opportunity to minutely discuss topics of their specific interests while all the participants were still connected with each other through the general meeting.[294] Newmarch claimed that the ISC's management of such sections were superior to the BAAS's, as the ISC's sections announced questions to be discussed prior to the actual gathering in a programme, which allowed participants to prepare beforehand.[295] By contrast, the BAAS provided no hint in advance as to the direction that the section would be likely to take.[296] As for the handling of the specialised sections' decisions, however, Newmarch was in favour of the BAAS, as the ISC's system appeared, in his eye, a 'great waste of time'.[297] In the ISC, the sections discussed their specialised topics for only half of the working hours of each day and spent the rest reporting back and making final decisions with the entire body of participants, the majority of whom were not familiar with specific topics discussed at the sectional meetings.[298] In the BAAS, each section could spend the entire working hours on specialised discussion and have the final say.[299]

Although Newmarch's verdict on the ISC's management of its sections suggests his conviction in the advantage of specialisation in statistics, he was not against the idea of a central control in statistics. On the contrary, Newmarch saw the lack of a central body as a serious issue in the ISC's organisation. Newmarch pointed out that the ISC was virtually dissolved after the closing of each meeting.[300] During the interval, there remained 'no competent central power' qualified to watch over and promote the fulfilment of the ISC's resolutions.[301] To fill the gap, Newmarch argued, it was necessary to establish 'a Central Committee' that would supervise the progress of a statistical inquiry and implement what was agreed upon at the ISC.[302] The Central Committee should be located in Brussels, and 'a man with the needful accomplishments as a linguist and statist' should be appointed as a 'central secretary of the Congress'.[303] In Newmarch's scheme, the Central Committee

[293] Ibid, 366–367.
[294] Ibid, 366–367.
[295] Ibid, 367.
[296] Ibid, 367–368.
[297] Ibid, 368.
[298] Ibid, 368.
[299] Ibid, 368.
[300] Ibid, 368.
[301] Ibid, 368–369.
[302] Ibid, 369.
[303] Ibid, 369. Ernst Engel promoted the establishment of the permanent committee of the ISC, which

of the ISC would appear to function as the CSC on an international scale, coordinating all the participating countries and homogenising the statistical data all over the world while the CSC in each country simultaneously would aim to achieve homogeneity of statistical data at the national level.

5-4. Multiple Types of Centralisation

Newmarch's grandiose plan never came to pass, nor did Albert's hope to implement the ISC's resolution regarding a centralised statistical office in Britain. In 1863, two years after the premature death of Albert, Farr reported the proceedings on the fifth ISC meeting in Berlin in the *JSSL* and reminded his readers of the late prince's unfulfilled wish.[304] Farr observed that, while each branch of statistics progressed due to the division of labour largely adopted in England, British statistics failed to achieve the synthesis of its work.[305] Despite Albert's 'luminous address' at the London meeting, according to Farr, Britain still had 'no central statistical board' and there was 'a want of co-ordination in our publications'.[306] Farr hinted that British statisticians should honour the late prince's wish and end the absence of a central statistical organisation. After all, Farr declared, 'had he lived, I believe, it might now have been remedied'.[307]

Almost ten years after Farr's plea, the absence of a centralised organisation was still haunting British statisticians. Farr, now the SSL's president, revisited the topic in his inaugural address delivered at the SSL in 1872. He claimed there were three possible modes of official statistics.[308] The first system was fully centralised in one office that would collect statistical data in every field.[309] Farr observed that such a centralised system would be impractical because no one could be qualified for the head of that office who was supposed to have intimate knowledge of all the fields of statistics.[310] The British situation, as Farr saw it, fell into the second system, in which each office would collect

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realized only in 1873. For Engel's idea, see Randeraad, *States and Statistics in the Nineteenth Century*, 118–120. Westergaard, *Contributions to the History of Statistics*, 180–182.

304 'Reports of the Official Delegates from England at the Meeting of the International Statistical Congress, Berlin, September, 1863,' *Journal of the Statistical Society of London* 26:4 (1863): 412–19.

305 Ibid, 412.

306 Ibid, 412.

307 Ibid, 412.

308 William Farr, 'Inaugural Address Delivered at the Society's Rooms, 12, St. James's Square, London, on Tuesday, 19th November, 1872,' *Journal of the Statistical Society of London* 35:4 (1872), 425–427.

309 Ibid, 425–426.

310 Ibid, 425–426.

data independently.[311] He conceded that the advantage of this system was that it allowed individual offices to develop thorough knowledge of their specific branches of statistics due to its specialisation.[312] However, the lack of coordination led to different modes of producing data among different offices and ended up accumulating heterogeneous data that could not be aggregated, even within the United Kingdom.[313] Although Farr acknowledged that the SDBT had attempted for decades to remedy the issue and act as a central organisation, he concluded that it had proved unsatisfactory.[314] Apparently, he once informed the British government about the resolution from the ISC Paris meeting regarding a statistical organisation as a proposed solution to the issues that British statistics had been suffering, but his advice was not heard.[315] In his 1872 address, Farr once again asked SSL members to remember what was recommended at the Paris meeting, which became his third model.[316] He urged the need to establish a statistical board in which primary statistical departments should be represented.[317] The third model could overcome the defects of the first and second systems, Farr argued, as the board 'should possess the power to insure[sic] correlation in certain things' while 'leaving the departments full liberty in others'.[318]

Apparently, Farr did not see the need to strictly follow the Belgian model as long as his system would harmonise different offices. His system would have the current prime minister as the president instead of a statistician as in the Belgian system, although he reserved the vice presidency for a statistician.[319] The most notable difference was that Farr's system aimed to produce more than national statistics. Farr envisaged that the central Statistical Board should include not only England, Wales, Scotland, and Ireland but also India and other principal colonies of the British Empire, which had been discussed in passing by Albert as well. Farr told his audience, 'The statistics of the empire will thus be brought to work together in harmony; science will gain by great generalisations, and the community of statistics will be another bond of union between us all in both hemispheres: the circle will be complete.'[320]

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311 Ibid, 425–426.
312 Ibid, 426.
313 Ibid, 426.
314 Ibid, 426–427.
315 Farr said that the Secretary of Treasury James Wilson wrote a department report on this matter, which I could not find. Ibid, 426–427.
316 Ibid, 427.
317 Ibid, 427.
318 Ibid, 427.
319 Ibid, 427.
320 Ibid, 427.

As its name suggests, the ISC's ostensible purpose was to introduce international uniformity in statistical data. However, it should be noted that the ISC did not simply presuppose the existence of a homogeneous national statistics as the basis of international statistics. The ISC recognised the need to create homogenous and complete national statistical data in each country, which, in turn, would be combined with each other to produce international statistical data. The ISC gave a vital role to a centralised statistical organisation in each country to produce complete and homogeneous national statistics and proposed the CSC model be adopted internationally. The CSC in each country was supposed to coordinate with different offices and homogenise respective national statistics. Although its function clearly overlapped with the Belgian CSC, the ISC's plan was more ambitious, as the CSCs of all the countries were designed to communicate with each other and, with the support of the ISC, ensure the uniformity among different countries' national statistics. In the ISC's scheme, the production of homogeneous national statistics was smoothly connected with the production of international statistics.

Although Westergaard suggests that the ISC's discussion of the statistical organisation was mainly of a practical rather than scientific nature, Victorian statisticians recognised the scientific importance of its topic.[321] The ISC's recommendation regarding the establishment of a centralised statistical organisation was welcomed by Levi in his reports in the *JSSL* regarding the ISC proceedings in Brussels and Paris. Levi used the ISC resolutions to highlight the absence of a central statistical office in Britain. In his report of the first ISC meeting, he made use of a loose definition of a centralised statistical organisation from the Brussels resolution and explored the possibility of the SSL to function as a central statistical body in Britain. In the second report, however, he proposed the expansion of the SDBT to coordinate different statistical departments in a similar way to the CSC.

Levi saw the parallelism between the role of a centralised statistical organisation and the statistician, as both should coordinate multiple actors who have developed intimate knowledge in their respective specialised fields and then produce general statistics that embrace all those specialised branches. He also observed that different interests behind the production of statistical data could be an obstacle for the ISC's project of internationally homogenising statistics, as statisticians could propose contradictory but

[321] Westergaard, *Contributions to the History of Statistics*, 176.

equally scientific methods of data production designed to serve different purposes. The ISC was expected to function as a place for negotiating between different interests and finding an agreeable common ground.

The ISC's London meeting provided British statisticians and statistical enthusiasts a great opportunity to promote their agendas. Albert confirmed that statistics should serve a general interest, as opposed to a specialised or local interest. He understood that isolated statistical facts would have little value. Statistical data should include all branches of fields and all countries so that they would provide a complete view, which, in turn, would help statisticians discover otherwise hidden social laws. Albert praised the ISC's project, but he had to acknowledge his country's failure to as yet establish the central statistical organisation recommended by the ISC, which resulted in producing incomplete and heterogenous British statistics.

Newmarch also agreed that a statistical organisation was instrumental to ensuring the production of complete statistical data. However, he was dissatisfied with the ISC's organisation due to its intermittent nature. In order to implement the ISC's goal, Newmarch proposed creating a permanent committee of the ISC that would function continuously as an international CSC and harmonise the interests of all the branches of statistics and all the countries.

Newmarch considered the ISC's sectional policy as essential to develop a specialised field of knowledge, but he also understood the importance that those fields be integrated into a general scheme. Farr's classification of official statistics highlighted the importance of integrating speciality and generality in statistics.

Farr's models for an official statistics system show that he distinguished two types of centralisation. He rejected a centralisation of statistics into a single office, as he could not believe any single person would be capable of dealing with all the fields of statistics. However, he did not believe in a system that would allow unconstrained specialisation, as specialisation in isolation would not produce general statistics. He believed coordination among specialised offices would be the only realistic answer to creating a balance between the specificity and generality of national statistics, and so, he favoured a system resembling the CSC that could profit from the division of labour among different branches of statistics while harmonising different interests behind the production of statistical data.

6. Conclusion

In this chapter, I have shown that a centralised statistical organisation was a vital topic in nineteenth-century statistics in relation to the conceptualisation of statistical fact. Statisticians envisaged that the centralisation of official statistics would resolve various issues in statistics, such as fragmentation, contradiction, and unnecessary detail.

The SCPD of 1833 examined questions regarding the best mode of providing statistical information to both Parliament and the public and, for the first time in history, provoked serious discussions regarding the roles of a statistical office in Britain. McCulloch saw the investigative function as an essential property of a statistical office to eliminate contradictory figures in official statistics. Victorian statisticians shared McCulloch's concerns over frequent discrepancies in statistical documents, as these were considered a major cause for public distrust in statistics. In contrast, the idea of a statistical office as an essentially investigative agency did not develop in the period covered in this chapter. Victorian statisticians' views aligned with Bowring's idea that the basic duty of a centralised statistical office was to integrate fragmented statistical data that had been divided by ministerial and regional lines, although Bowring's plan to concentrate all the statistical works into a single office was not embraced by the majority of statisticians. Bowring's optimistic view regarding the administrative concentration into a single office appeared to be indifferent to the issue of the competing interests behind statistical data-gathering, which Marshall suggested during his testimony at the SCPD.

The establishment of the Belgian CSC in 1841 was advocated as a model to follow in Britain, as it appeared to provide a solution to the issues that the SDBT faced, including the mutual neglect among the different government offices regarding the production of official statistics and their potentially conflicting interests. The CSC was designed to arbitrate different interests and coordinate various actors to produce complete and homogenous national statistics in a way that would not threaten the independence of each governmental department. The ISC advocated the CSC as instrumental to creating national statistics but, at the same time, expanded the CSC's role in envisaging the creation of statistics that were complete and homogeneous across countries. As well as serving administrative purposes, the ISC was supposed to lay the scientific foundation of statistics since complete and homogeneous statistical data would make any part of the world comparable to the rest. To achieve this goal, Newmarch argued the need for further

development in the organisation of the ISC and proposed establishing the ISC's permanent committee, which was supposed to function as an international CSC.

British statisticians understood that the ISC's scientific mission was beyond national borders. At the same time, they recognised the ISC's importance to national statistics in Britain and made use of the ISC's resolutions in their criticisms of the system of official statistics in Britain. The SDBT already existed as a supposedly central office, but statisticians repeatedly claimed its ineffectiveness in achieving reform of British national statistics in comparison with the ISC's recommendation. British statisticians urged the government to follow the CSC model and highlighted the importance of coordination in homogenising national statistics. However, they thought it was unnecessary to strictly follow the model and adopted modifications as they saw fit in the British context.

The discussion regarding statistical organisation shaped the concept of statistical fact. Both the CSC and the ISC recognised the difference between general interest and specific interest and highlighted the importance of the former in the production of national statistics. Only with this conception of statistical fact could accurate numerical data that were relevant to a specific group of people be called 'unnecessary detail' because, according to this view, national statistics were conceived as facts serving the general interest rather than merely specific interests.

The distinction between general and specific interests also shaped the forms of expertise in statistics. As the organisation of the CSC exemplified, statistics took advantage of a division of labour by dividing itself into specialised branches while each branch of statistics was not isolated from each other. The expertise of statisticians in this period reflected such generality and speciality of statistics. Statisticians' expertise was understood in relation to their abilities to coordinate people with specific knowledge to produce general statistics as well as their intimate knowledge of their specialised fields in statistics. The dual aspects of statistical expertise in Victorian Britain would be vital for the transformation of statistics from a comprehensive social science to the mathematical science of numbers in general, which would commence in late nineteenth-century Britain.

Randeraad described the ISC as the crystallisation of a dream and an illusion of nineteenth-century statistics that was destined to fail. Randeraad is correct to point out that the ISC did not realise what it hoped to achieve. Throughout the nineteenth century, the CSC, or other forms of a centralised statistical organisation that satisfied the

statisticians, were never adopted in Britain despite British statisticians' repeated criticism of the absence of a central statistical body.[322] However, 'dream' and 'illusion' may be misleading word choices because they do not capture the reality of the model that the ISC provided. Models do not exist in the same way as buildings, but they do exist as a kind of speculative entity against which the reality is evaluated and improved. Victorian statisticians never saw the CSC established in their country, but they repeatedly employed the CSC model as a tool to evaluate, point out problems, and suggest solutions to their system of official statistics. The organisational model that the ISC provided was far more tangible and practically useful than a mere vague dream.

This chapter has demonstrated that historians can study the concept of centralisation as an object in its own right, as opposed to a timeless analytical concept with which historical events are described and explained. Historians and social scientists have associated the creation of governmental statistical departments with the formation of a centralised state and the subsequent creation of the sense of national unity. As Higgs argues, the sweeping narrative of the centralisation of power does not agree with, at least, the British case.[323] One could perhaps conclude that 'centralisation' is an oversimplified concept that is unfit for historical analysis. However, the idea of centralisation was already available in the 1830s and, as this chapter demonstrates, promoted by Victorian bureaucrats and statisticians as a cure for the malady of which the administrative system was suffering. Victorian statisticians promoted different models of centralisation, and as Farr's three systems of official statistics show, they preferred one type of centralisation over others.[324]

The ISC was supposed to create complete and homogeneous statistical data that, in theory, should cover every branch of statistics in every country, which was, in turn, to lay the basis for international comparison. The comparison was fundamental to statistics as a way of knowing. With statistical comparison, one was supposed to be able to detect previously unknown social forces that governed the conditions of human beings. The discovery of

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[322] See Baines' 1918 report about the British system of statistics. Athelstane Baines, 'The History and Development of Statistics in Great Britain and Ireland,' in *The History of Statistics, Their Development and Progress in Many Countries; in Memoirs to Commemorate the Seventy Fifth Anniversary of the American Statistical Association*, ed. by John Koren (New York: Macmillan, 1918), 380–381. To cite a few from an endless list of complaints about the lack of centralised statistical organisation in Britain, see *Official Statistics Committee Second and Third Report*, iii. Frederic J. Mouat, 'History of the Statistical Society of London,' *Journal of the Statistical Society of London*, Jubilee Volume, (1885), 53. Baines, 'History and Development of Statistics in Great Britain and Ireland,' 389.

[323] Higgs, *The Information State in England*, Ch. 2.

[324] Apparently, Farr's classification was not unique. Prévost and Beaud reports that Corrado Gini also used a similar one. See, Prévost and Beaud, *Statistics, Public Debate and the State, 1800-1945*, 77–78.

an unsuspected correlation between several factors presupposed the possibility of comparison among variables that did not appear to be inherently related. The data that satisfied such requirements was not a natural product of things and, it was supposed, had to be deliberately produced by cooperation among centralised statistical offices in every country and statisticians throughout the world.

Chapter Four

A House of Human Knowledge

The Statistical Society of London and its Claims of 'Social' Science for Public Recognition, 1860–1873

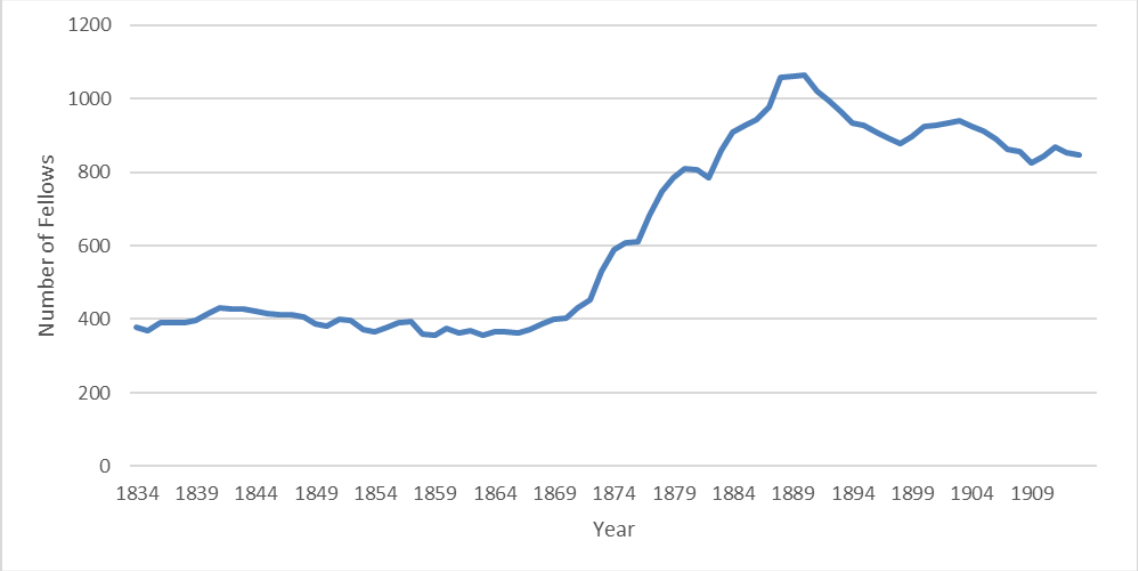
1. The Sudden 'Popularity' of the Statistical Society of London in the 1870s

The Statistical Society of London (SSL) prospered in the 1870s, or so it would appear if the SSL's membership were used as an indicator of its prosperity (see fig. 1[1]). When the Royal Statistical Society (RSS), the successor of the SSL, celebrated the 150-year anniversary of the SSL/RSS in 1984, RSS statistician Sidney Rosenbaum published a statistical table for SSL/RSS membership between 1834 and 1983 to demonstrate its growth over its history.[2]

As table 1 shows, the SSL started with 378 fellows in 1834. While it dropped to 369 the next year, it gradually increased over the following years, reaching 432 in 1841. The number gradually decreased over the following years, reaching 380 in 1850. In 1851, the society saw a small rise to 400. During 1852–1867, it fluctuated between 350 and 400. It returned to 400 in 1869 and rapidly grew in the following years. It marked 530 in 1873, exceeding 500 for the first time. It further grew, surpassing 600 in 1875 and 700 in 1878 and reaching 808 in 1880. It dropped to 786 in 1882, but it again increased, reaching 909 in 1884, the society's jubilee year. In 1887, the SSL received the royal warrant and was renamed the RSS. The next year, the number of fellows surpassed 1,000.

[1] The figure was created from the data provided in the following paper. Sidney Rosenbaum, 'The Growth of the Royal Statistical Society', *Journal of the Royal Statistical Society. Series A (General)* 147:2 (1984), 379.
[2] Ibid, 379.

Figure 1: The growth in the number of fellows (1834–1913) [3]



As Rosenbaum shows, the SSL experienced its highest growth rate in the 1870s. Table 1 gives the precise year as 1873; this year saw an increase of 76 members and marked the highest increase rate of 16.7% in the SSL's history. Rosenbaum wondered why the SSL became suddenly so popular, but he was unable to provide a clear explanation. The answer is straightforward; that year, the SSL actively encouraged its fellows to nominate suitable candidates for new fellows.

Dated 30 January 1873, the SSL Council issued a circular among its fellows to solicit their help in expanding the 'usefulness and influence' of the SSL.[4] While explaining its achievements and future plans, the SSL appealed, 'That the Society may, with any hope of success, be able to extend its sphere of useful activity, and accomplish the various ends we have indicated, will necessitate a considerable increase of Fellowship and Revenue.'[5] The SSL's communication enclosed two nomination forms for fellowship. The circular and a similar letter were distributed among not only fellows but peers, members of parliament, and other gentlemen who might have been interested in statistical research.

[3] For original data, see Rosenbaum, 'The Growth of the Royal Statistical Society', 379.
[4] 'Report of the Council for the Financial Year Ended 31st December, 1872, and for the Sessional Year Ended with June, 1873, Presented at the Thirty-Ninth Anniversary Meeting of the Statistical Society, Held at the Society's Rooms, 12, St. James's Square, on 30th June, 1873; with the Proceedings of That Meeting', *Journal of the Statistical Society of London* 36:3 (1873), 347.
[5] Ibid, 348.

The Council's efforts paid off, as the SSL experienced an unusual increase in membership.[6]

Table 1: The Number of Fellows at the End of Each Year (1834–1913)[7]

Year	Fellows	Year	Fellows	Year	Fellows	Year	Fellows
1834	378	1854	367	1874	588	1894	933
1835	369	1855	377	1875	607	1895	928
1836	390	1856	391	1876	611	1896	910
1837	390	1857	394	1877	683	1897	892
1838	392	1858	359	1878	746	1898	878
1839	398	1859	358	1879	783	1899	896
1840	416	1860	374	1880	808	1900	923
1841	432	1861	364	1881	807	1901	926
1842	429	1862	368	1882	786	1902	932
1843	428	1863	357	1883	860	1903	939
1844	422	1864	365	1884	909	1904	925
1845	415	1865	367	1885	928	1905	911
1846	411	1866	364	1886	943	1906	891
1847	412	1867	371	1887	977	1907	861
1848	406	1868	387	1888	1059	1908	855
1849	387	1869	400	1889	1060	1909	825
1850	380	1870	403	1890	1063	1910	845
1851	400	1871	431	1891	1019	1911	867
1852	396	1872	454	1892	994	1912	854
1853	371	1873	530	1893	964	1913	846

The SSL made conscious efforts to increase its membership. Since the SSL's main income was subscription fees from its fellows, the number of members virtually had a decisive impact on the SSL's financial state. This reminds us of the simple fact that the fellows of the SSL themselves were concerned with the increase and decrease in membership before historians found this an interesting question to be answered. As Rosenbaum notes, his statistical table heavily relies on annual membership data provided in the SSL Council reports, which were circulated among the fellows and, since 1838, were made public in the *Journal of the Statistical Society of London* (*JSSL*).[8] For the first 20 years, the SSL Council reports did not adopt a standardised reporting style; they often

[6] Ibid, 348–349.
[7] Reproduced from Rosenbaum, 'The Growth of the Royal Statistical Society', 379.
[8] Rosenbaum, 'The Growth of the Royal Statistical Society', 379.

reported the total number of fellows at the time of the annual meeting, but they sometimes just counted the number of newly elected fellows, withdrawals, deaths, and defaulters without explicitly mentioning the total number.

The systematic reporting of the number of fellows was introduced in the 1861 Council Report. A few years prior to this, in 1859, the SSL decided to increase its financial transparency. While the SSL had been publishing its account statements in the Council reports, the SSL further began to include the auditor's reports in the Council reports.[9] In the same year, the management of the fellows list was improved to facilitate the calculation of the expected amount of subscriptions.[10] The 1861 Council Report set the pace, counting the total number of fellows at the end of December along with the number of new and removed fellows between January and December.[11]

Here, a short explanation for the term 'fellows' and its difference from 'members' is in order. Although they were often used interchangeably within the SSL, the meaning between those two words sometimes differed. 'Members' were divided into three classes: 'fellows'; '(foreign) honorary members'; and 'corresponding members', who lived outside the United Kingdom. For example, the 1838 Council Report notes that the SSL had 402 members, comprising 14 foreign honorary members, 6 corresponding members, and 382 fellows (called 'annual subscribers').[12] In 1843, the Council Report began to exclude foreign honorary members and corresponding members from the counting. This change is not surprising because the number of fellows mattered more than other members did. Rightly called 'annual subscribers' by the 1838 Council Report, fellows were required to pay two guineas every year, which formed a major income source for the

[9] 'Twenty-Fifth Anniversary Meeting of the Statistical Society', *Journal of the Statistical Society of London* 22:2 (1859), 206.
[10] 'Twenty-Sixth Anniversary Meeting of the Statistical Society', *Journal of the Statistical Society of London* 23:2 (1860), 145.
[11] 'Report of the Council for the Financial Year Ended 31st December, 1860, and for the Sessional Year Ended March, 1861, Presented at the Twenty-Seven Anniversary Meeting of the Statistical Society, Held in the Society's Rooms St. James's Square, on Friday, 15th March, 1861; with the Proceedings of That Meeting', *Journal of the Statistical Society of London* 24:2 (1861): 161–66.
[12] The discrepancy between the number cited here and Rosenbaum's table derives from different timing of counting. While Rosenbaum reports the number at the end of December, the 1838 Council Report counted it at the time of the Annual Meeting.

SSL.[13] For the first hundred years of the SSL's history, there was no change made to the amount of the subscription fee. [14]

The SSL's membership statistics enabled its fellows to monitor the total number of fellows and its fluctuation. The systematic recording of the membership statistics in 1860 provided the SSL members with an object of observation. It also created an object of intervention, as the SSL fellows had a vested interest in improving the SSL's financial situation, which defined limits on the SSL's activities. The fellows themselves could take action to increase the total membership; the Council Report of 1873 shows that this was exactly what happened.

This raises a question: what compelled the SSL to increase the number of fellows? Through the examination of the SSL's financial activities in 1860–1873, this chapter studies the SSL's endeavour to expand its scope of scientific activities.

2. Public Support for Statistics: 1860–1873

As previously mentioned, the systematic reporting of the number of fellows became possible after the Statistical Society adopted an improved method of record keeping for the members list in 1859:

> In presenting this Report, they [auditors] cannot but express their gratification at the improved method of keeping the List of Members, forming, as it does, the basis of the amount of subscriptions due in the year, the Deaths and Resignations of Members being certified by the Council. They have thus been enabled to correct the printed List of Members of the Society on the 31st December, 1859, and to certify it for the use of future Auditors.[15]

The reason behind this change is unstated, but the auditors' favourable comments suggest that they recognised the financial importance of increasing the number of fellows.

[13] Life membership was also available for twenty Guineas. See 'Appendix I Regulations for the Statistical Society of London (1835)' in Royal Statistical Society, *Annals of the Royal Statistical Society, 1834-1934* (London: Royal Statistical Society, 1934), 265.
[14] See the by-law of the SSL in 1834 and 1934, .
[15] '1860 SSL Council Report', 145. [] is inserted for clarification.

During the SSL's annual meeting in 1860, James Hammick[16] apparently made some observations regarding the importance of increasing the number of fellows as a way to promote the SSL's prosperity and expand its activities.[17] While the Council Report does not record Hammick's original discussion, the reply from William Newmarch,[18] one of the then honorary secretaries, was documented. Newmarch admitted that the SSL's activities were limited by the want of funds and that an increase in the number of fellows would improve the situation.[19] He pointed out, however, that the same result also could be achieved by reducing rent and similar expenses and proposed two alternatives to achieve economy: seeking governmental aid and cooperation with other similar societies. He argued that the government could arrange accommodation for the SSL and lift some financial burdens. Alternatively, the SSL, with the cooperation of other learned societies, could build a central building by themselves that could accommodate all participating societies and reduce the rent. For the latter scheme, the SSL had been sharing the building with and receiving rent from the Institute of Actuaries since November 1848.[20]

Hammick's observation framed the number of fellows as primarily a financial matter and presented to the SSL's fellows an increase in the membership as a possible means of expanding the SSL's activities. Newmarch's reply did not directly pursue this line and led the SSL to seek measures to reduce its financial burden either through the provision of government housing at a subsidised rate or through accommodation shared with other societies. Those three options shaped the SSL's future actions for tackling its financial burden. In the following years, the SSL sought, as Newmarch suggested, state aid and cooperation with other societies rather than an increase in its membership.

The 1862 Council Report pursued the cooperation scheme and speculated about the possibility of a federation with six or seven other societies of 'social science', by which the Council Report meant 'Amendment of the Law, Sanitary Science, Actuarial Science,

[16] His name is printed as 'Mr. Hammack', but this person is most likely to refer to James Thomas Hammick for the following reason. The 1862 Council Report shows James Thomas 'Hammack' joined the Council of the SSL, but after the 1863 Council Report, his name is altered as James Thomas 'Hammick'. James Thomas Hammick was a secretary of the General Register Office (GRO). He was the treasure of the SSL in 1868–1874. He published *The Marriage Law of England* in 1873. There is no *Oxford Dictionary of National Biography* (*ODNB*) entry for him.
[17] '1860 SSL Council Report', 144.
[18] For Newmarch's biography, see Introduction 'Sources and Methods' section.
[19] Ibid, 144.
[20] See Royal Statistical Society, *Annals*, 80.

Statistics, Juridical Science, and Political Economy'.[21] At the end of the year, Newmarch further developed the idea in a letter to the Council when he resigned as the honorary secretary and journal editor of the SSL upon his acceptance of a job offer from the bank Glyn, Mills, Currie & Co.[22] Newmarch's letter proposed the establishment of the 'Institute of Social Science'.[23]

Taking the model from the British Association for the Advancement of Science (BAAS), established in 1831, and the National Association for Promoting Social Science, also known as Social Science Association (SSA), established in 1857, this new institute was to be governed by the central council while allowing the independence of individual participating societies. Newmarch named seven London-based societies for inclusion in the future institute: the SSL; the Institute of Actuaries; the Juridical Society; the Society for Amendment of Law; the Reformatory Union; the Association of Sanitary Officers; and the SSA.[24] Newmarch argued that the federation of those societies would bring benefits to all participating societies through the practical utility of a reduced expense as well as the use of a common library and collaborative scientific pursuits.[25]

Newmarch's letter also considered the possibility of government aid. He called attention to the memorial for the recently deceased Prince Albert to be erected in South Kensington. Newmarch stated that the government was planning to build a new hall or college in addition to the memorial and offer accommodation for learned societies.[26] He took this opportunity to claim governmental support for the future Institute of Social Science and portrayed Albert as the champion of social science.[27] Newmarch insisted:

[21] 'Report of the Council for the Financial Year Ended 31st December, 1861, and for the Sessional Year Ended March 1862, Presented at the Twenty-Eighth Anniversary Meeting of the Statistical Society, Held at the Society's Rooms, 12, St. James's Square, on Saturday, 15th March, 1862; with the Proceedings of That Meeting', *Journal of the Statistical Society of London* 25:2 (1862), 107.
[22] His letter was read before the Council meeting and published in the *Journal* next year. 'At a Meeting of the Council of the Statistical Society, Held at the Rooms of the Society, 12 St. James's Square, on Thursday, 11th December, 1862, Colonel Sykes, M.P., F.R.S., Vice-President, in the Chair the Following Communication from William Newmarch, Esq., F.R.S., Was Read', *Journal of the Statistical Society of London* 26:1 (1863): 78–81.
[23] Ibid, 80.
[24] Ibid, 80.
[25] Ibid, 79.
[26] Ibid, 81.
[27] Ibid, 81.

> If this statement should be verified, it is allowable to say that no plan would more happily fulfil some of the favourite schemes of the lamented Prince himself, than a union in his memory of those learned bodies which cultivate that Social Science which is so greatly beholden to him as a founder, guide, and expositor. [28]

To consider Newmarch's proposal regarding the establishment of the Institute of Social Science, the Council resolved to form a subcommittee consisting of William Henry Sykes,[29] William Farr, [30] William Newmarch, and honorary secretaries, one of which was William Guy.[31]

Newmarch's scheme turned out to be a failure. The original plan for the Albert Memorial was to build a science hall as well as a monument, but that science hall was removed from the plan in the end.[32] On 26 May 1864, the general secretary of the SSA, George Hastings,[33] visited the SSL and proposed the union of the SSL and the SSA, which already had absorbed the Law Amendment Society and acquired its library and office the previous year. [34] On 13 June of the same year, the SSL's committee, chaired by William Guy, considered the letter from Hastings but decided not to proceed further until Hastings provided a definite plan.[35] The plan did not progress further, and by the end of 1864, the idea of the Institute of Social Science was apparently aborted.

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[28] Ibid, 81.
[29] For Sykes' biography, see Chapter One footnote 79.
[30] For Farr's biography, see Introduction footnote 2.
[31] Ibid, 81. For Guy's biography, see Introduction footnote 62.
[32] House of Commons debate, 23 April 1863, vol. 170, col. 603.
[33] George Woodyatt Hastings was a politician and social reformer. His interest in social reform led him to join the Society for Promoting the Amendment of the Law and the National Reformatory Union. Hastings played a crucial role in bringing those two societies and the Society for Promoting the Employment of Women together to form the SSA based on the BAAS model. For his *ODNB* entry, see Goldman, Lawrence. 2004 'Hastings, George Woodyatt (1825–1917), social reformer and politician.' *Oxford Dictionary of National Biography*. [accessed on 19 Oct. 2018]
[34] Lawrence Goldman, *Science, Reform and Politics in Victorian Britain: The Social Science Association, 1857-1886* (Cambridge: Cambridge University Press, 2002), 86–87.
[35] See the Council Minute on 12th May and 16th June 1864 and the Miscellaneous Committees minutes on 26 May 1864 and 13 June 1864. 'B2/2 Council Minutes, Oct 1846-Dec 1872', London, Royal Statistical Society Archive; 'B7 Committee of Inquiry into the State of Education Minutes', London, Royal Statistical Society Archive. Also, see Royal Statistical Society, *Annals*, 111 and Goldman, *Science, Reform and Politics in Victorian Britain*, 87.

The SSL did not give up on the idea of governmental aid. In 1868, the SSL reported the death of André-Michel Guerry,[36] an eminent French statistician and a foreign honorary member of the SSL. The SSL Council Report reminded the audience that, while Guerry's comparative criminal statistics discussed both France and Britain, both governments did not provide Guerry any of the support that he deserved, the report insinuated, and left an important field of statistical work to a private individual with private funds.[37]

In the next year, the SSL's Council Report referred to 'building erecting for the use of the learned and scientific societies of metropolis' and expressed its hope for a governmental offer for accommodation.[38] The name of the site was not stated, but it is highly likely to have been Burlington House, with which the SSL was distantly related. On 4 March 1859 in the House of Lords, the fourteenth Earl of Derby[39] discussed the erection of a new building at the site of Burlington House.[40] The House of Lords was primarily discussing the relocation of the Royal Academy of Arts, being separated from the National Gallery in Trafalgar Square, to Burlington House. The Royal Society, the Linnean Society, and the Chemical Society had already been in residence in Burlington House since 1857, but the government promised to give accommodation to other learned societies that had been based in the crowded Somerset House, as a new building was envisioned to provide more space.[41] The Earl of Derby confirmed that the government already promised several societies, such as the Royal Astronomical Society, space in Burlington House, but he further noted that the recommendation was made to include the SSL and the Royal

[36] For his role of inventing moral statistics and criminology, see Piers Beirne, *Inventing Criminology: Essays on the Rise of 'Homo Criminalis'* (Albany NY: State University of New York Press, 1993), Ch. 4 Also, see the preface in the translation of Guerry's book. André-Michel Guerry, *A Translation of Andre-Michel Guerry's Essay on the Moral Statistics of France (1833): A Sociological Report to the French Academy of Science*, trans. Hugh P. Whitt and Victor W. Reinking (Lewiston; Queenston; Lampeter: Edwin Mellen Press, 2002).

[37] 'Report of the Council for the Financial Year Ended 31st December, 1867, and for the Sessional Year Ended 15th March, 1868, Presented at the Thirty-Fourth Anniversary Meeting of the Statistical Society, Held at the Society's Rooms, 12, St. James's Square, on Monday, 16th March, 1868; with the Proceedings of That Meeting', *Journal of the Statistical Society of London* 31:2 (1868), 123–124.

[38] 'Report of the Council for the Financial Year Ended 31st December, 1868, and for the Sessional Year Ended 15th March, 1869, Presented at the Thirty- Fifth Anniversary Meeting of the Statistical Society, Held at the Society's Rooms, 12, St. James's Square, on Monday, 15th March, 1869; with the Proceedings of That Meeting', *Journal of the Statistical Society of London* 32:2 (1869), 155.

[39] Edward George Geoffrey Smith Stanley was the prime minister of the United Kingdom in 1852, 1858–1859, and 1866–1868. For his ODNB entry, see Hawkins, Angus. 2009 'Stanley, Edward George Geoffrey Smith, fourteenth earl of Derby (1799–1869), prime minister.' *Oxford Dictionary of National Biography.* [accessed on 19 Oct. 2018]

[40] House of Lords debate, 4 March 1859, vol. 152, cols. 1250–1253.

[41] The Statistical Society of London made an application for a room in Somerset House in 1836, but the request was not accepted. See Royal Statistical Society, *Annals*, 34.

Geographical Society.[42] The plan, however, took a long time to be realised. In 1867, the Royal Academy of Arts finally moved into the main building of Burlington House. The Royal Society and other societies were offered a place in a new building. To Newmarch's dismay, however, the SSL was not granted this privilege.

The 1870 Council Report admitted the failure of securing a place in the new building discussed the previous year. The Council announced a new cooperation plan on this matter with other societies and, on 6 April 1870, sent a circular to similar societies who were not offered accommodation by the government.[43] On 9 April 1870, *The Athenaeum* reported that the SSL asked other scientific societies to send a delegate at its conference to discuss the problem of accommodation.[44] The circular asked three questions of each society: whether it was chartered, the number of its members, and the annual expense of house accommodation.[45] By 26 April, twenty organisations had replied to the SSL.[46] The first meeting was held on 28 April, and Newmarch, then president of the SSL, was in the chair. [47] Eighteen bodies were present, including the SSL.[48] Each society was asked to respond by the end of May as to whether it would agree with the proposed plan, and fourteen societies agreed to form a joint committee for further discussion.[49]

William Guy was chosen to represent the SSL in the joint committee.[50] In December 1870, the *JSSL* published Guy's proposal, titled 'On the Claims of Science to Public Recognition and Support; with Special Reference to the So-Called "Social Sciences"'. This paper claimed a government provision for a site in Embankment for societies

[42] House of Lords debate, 4 March 1859, vol. 152, col. 1251.
[43] 'Report of the Council for the Financial Year Ended 31st December, 1869, and for The Sessional Year Ended with June, 1870, Presented at the Thirty-Sixth Anniversary Meeting of The Statistical Society, Held at the Society's Rooms, 12, St. James's Square, on Thursday, 23rd June, 1870; with the Proceedings of That Meeting', *Journal of the Statistical Society of London* 33:2 (1870), 207.
[44] 'Science Gossip', *The Athenaeum*, (9 Apr 1870), 489.
[45] '1870 SSL Council Report', 207–208.
[46] 'B2/2 SSL Council Minutes', 601.
[47] '1870 SSL Council Report', 208.
[48] The list of attended societies is the following: Anthropological Society, Archaeological Association, Archaeological Institute, East India Association, Entomological Society, Ethnological Society, Institute of Actuaries, Iron and Steel Institutes, Juridical Society, Mathematical Society, Meteorological Society, Photographical Society, Royal Colonial Institute, Social Science Association, Statistical Society, Victoria Institute, Zoological Society. Ibid, 209.
[49] Ibid, 209.
[50] Ibid, 210.

engaging in social science, where the federation of those societies would erect 'the Scientific Societies House'.[51]

The SSL led the joint committee. Then-SSL President Newmarch and one of the honorary secretaries, Frederick Purdy,[52] respectively assumed the offices of the president and honorary secretary of the joint committee.[53] Newmarch did not have a vote to avoid overrepresentation of the SSL, as the SSL itself was delegated by Guy.[54] The joint committee adopted Guy's plan to demand the governmental provision of a site between Embankment and White Hall and, on their part, to raise funds for the building. In May 1871, the joint committee sent a memorial to the Chancellor of Exchequer, signed by nine societies: the SSL, the SSA, the Institute of Actuaries, the Meteorological Society, the Juridical Society, the Anthropological Institute, the Iron and Steel Institute, the Photographic Society, and the Royal Colonial Institute.[55] By the time of the annual meeting held on 22 June 1871, the committee had received permission to meet with then-Chancellor of Exchequer Robert Lowe[56] but was recommended to contact Charles Gore,[57] then chief commissioner of Wood Forests and Land Revenue, as Gore was responsible for the site the joint committee had been claiming.

However, the communication apparently came to a halt. In his Presidential Address delivered on 21 November 1871, William Farr, the newly elected SSL president, was frustrated with still being a tenant of the London Library while other learned societies were provided accommodation in Burlington House or Somerset House.[58] Farr just wished for Guy's plan to be approved by the government.

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[51] William Augustus Guy, 'On the Claims of Science to Public Recognition and Support; With Special Reference to the So-Called "Social Sciences."', *Journal of the Statistical Society of London* 33:4 (1870): 433–51.
[52] For Purdy's biography, see Chapter Two footnote 106.
[53] 'Report of the Council for the Financial Year Ended 31st December, 1870, and for the Sessional Year Ended with June, 1871, Presented at the Thirty-Seventh Anniversary Meeting of the Statistical Society, Held at the Society's Rooms, 12, St. James's Square, on Thursday, 22nd June, 1871; with the Proceedings of That Meeting', *Journal of the Statistical Society of London* 34:2 (1871), 244.
[54] Ibid, 244.
[55] Ibid, 238–239.
[56] For his *ODNB* entry, see Parry, Jonathan. 2011 'Lowe, Robert, Viscount Sherbrooke (1811–1892), politician.' *Oxford Dictionary of National Biography*. [accessed on 19 Oct. 2018]
[57] For his *ODNB* entry, see Lunt, James. 2004 'Gore, Sir Charles Stephen (1793–1869), army officer.' *Oxford Dictionary of National Biography*. [accessed on 19 Oct. 2018]
[58] William Farr, 'Inaugural Address Delivered at the Society's Rooms, 12, St. James's Square, London, on Tuesday, 21st November, 1871', *Journal of the Statistical Society of London* 34:4 (1871), 419.

On 5 August 1872, the project encountered an unfavourable development when John Lubbock[59] brought the issue up for discussion in the House of Commons.[60] Lubbock claimed that governmental aid for learned societies was insufficient and, then, further referred to the request of the federation of learned societies led by the SSL for the provision of a site. In reply, the Joint Secretary of Treasury William Baxter[61] claimed that he had never heard of the SSL's request but that there would be no hope that the government would entertain such a request.[62] The news of Baxter's cold reply soon spread among the SSL's fellows through the *JSSL* of September 1872.[63]

It was after these events when the SSL Council issued the circular to increase its membership. On 9 January 1873, the Council first brought up for discussion a form for the circular and continued to discuss it in the next meeting on 16 January. On 30 January, the Council finally circulated it among the fellows.[64] The circular requested the introduction of new fellows and listed the multiple merits of this action. A direct stimulus for this action apparently came from the failure to secure accommodation with the aid of the government.[65] The Council minutes show that the Council ordered the printing of a thousand copies of Guy's letter to Farr, then president, in which Guy introduced a new plan for a 'Scientific House'.[66] In the letter, Guy gave up the hope of governmental aid and proposed erecting a central building on their own, with the help of other learned societies. Guy asked whether Farr could raise the building funds of £40,000, which was a necessary expense estimated by Newmarch.

The grandiose plan of Guy's Scientific House never came to fruition. Although the Council's circular claimed a new plan for acquiring a new accommodation 'on the point of realisation', the plan had to be 'postponed' by the end of June 1873.[67] On 10 July 1873,

[59] John Lubbock was a scientific writer and one of the members of the science pressure group, X Club. For his *ODNB* entry, see Alborn, Timothy L. 2012 'Lubbock, John, first Baron Avebury (1834–1913), banker, politician, and scientific writer.' *Oxford Dictionary of National Biography*. [accessed on 19 Oct. 2018]
[60] House of Commons debate, 5 August 1872, vol. 213, cols.514–515
[61] For his *ODNB* entry, see Carlyle, E. I. 2004 'Baxter, William Edward (1825–1890), politician and author.' *Oxford Dictionary of National Biography*. [accessed on 19 Oct. 2018]
[62] House of Commons debate, 5 August 1872, vol. 213, col. 515
[63] 'House Accommodation for Learned Societies', *Journal of the Statistical Society of London* 35:3 (1872): 373–75. This article includes excerpts of the parliamentary discussion published in *The Times* and a critical commentary on Baxter's reply published in *The Economist*.
[64] 'B2/3 Council Minutes, Jan 1873–Dec 1889', London, Royal Statistical Society Archive, 2–3. The letter was reprinted in the following: '1873 SSL Council Report', 347–348.
[65] Ibid, 348.
[66] For the letter, see 'B2/3 SSL Council Minutes', 4–5 [13 Feb 1873].
[67] '1873 SSL Council Report', 348.

Sir Francis Goldsmid[68] and Sir Charles W. Dilke[69] agreed to donate £120 to Guy's scheme, which formed the Building Fund at the SSL.[70] However, the project did not produce anything.

These events show that the 1873 circular, which requested the nomination of candidates for membership and caused the sudden 'popularity' of the SSL, was the product of the SSL's policy change. Starting in 1860, the SSL had been trying to relieve the financial burden of rent. While the active recruitment of fellows came to its attention as a potential financial strategy, the SSL was more interested in the reduction of expenses. The SSL endeavoured to gain governmental accommodation at a subsidised rate. After unsuccessful attempts to acquire a room in Burlington House and Albert Memorial, the SSL decided to form a federation in 1870 to erect a Scientific Societies' House and requested a governmental provision for a building site. By the end of 1872, it turned out to be another failure, pushing the SSL to circulate the solicitation for new fellow nominations.

As the SSA was a member of the joint committee, Lawrence Goldman's book on the study of the SSA mentions the development of the SSL's scheme from 1870 to 1873. He attributes the failure of the project to the difference in analytical styles regarding social questions among participant societies, particularly between the policy science of the SSA and the racial science of the Anthropological Institute.[71] As Goldman suggests, the failure of this project is important in terms of the institutionalisation of social science in Britain and its obstacles. A further examination of the historical context of the joint committee can enrich Goldman's point.

[68] Francis H. Goldsmid was a lawyer. For his *ODNB* entry, see Alderman, Geoffrey. 2004 'Goldsmid, Sir Francis Henry, second baronet (1808–1878), lawyer and Jewish communal leader.' *Oxford Dictionary of National Biography*. [accessed on 19 Oct. 2018]
[69] Charles W. Dilke was a politician. He was the president of the RSS in 1907–1909. For his *ODNB* entry, see Jenkins, Roy. 2008 'Dilke, Sir Charles Wentworth, second baronet (1843–1911), writer and politician.' *Oxford Dictionary of National Biography*. [accessed on 19 Oct. 2018]
[70] '1873 SSL Council Report', 340. Also. See Royal Statistical Society, *Annals*, 108. The *Annals* record that in 1879 Dr Siemens promised to offer £10,000 to erect the 'House of Applied Science' and the Committee was formed, but the plan was not agreed. In 1885, Guy himself left a bequest for the SSL, which was realised in 1905, on the death of his widow, and amounted to more than £9,000.
[71] Goldman, *Science, Reform and Politics in Victorian Britain*, 86, 88, 90.

The SSL's demand for government aid also can be seen in the broader context of a contemporaneous scientific reform movement that was changing the relationship among science, the state, and the public in Victorian Britain. The movement led to the formation of the Royal Commission on Scientific Instruction and the Advancement of Science over 1870–1874 and its landmark Devonshire Reports.[72] In the next section, I examine the formation of the joint committee in this context.

3. The Statistical Society and the Science Reform Movement, 1870–1873

The SSL took the initiative in forming the joint committee to consider the accommodation of scientific societies in April 1870. The joint committee later resolved to build a 'Scientific Societies' House', as Guy called it, to provide permanent accommodation for scientific societies in London. Although it appears a rather peripheral event to us today, the event was associated with a bigger contemporaneous science reform movement, known as the 'endowment of research movement'.

It is not easy to pinpoint when the science reform movement began. The formation of the X Club,[73] whose members included Thomas Huxley[74] and John Lubbock, had already taken place in 1864. *Nature*, established in 1869, advocated for science reform.[75] It was Alexander Strange's[76] paper in 1868 that brought material realisation to the movement.[77] In August 1868, Strange read a paper titled 'On the Necessity for State Intervention to Secure the Progress of Physical Science' at the BAAS. His paper won wide approval, and

[72] Roy M. Macleod, 'The Support of Victorian Science: The Endowment of Research Movement in Great Britain, 1868–1900', *Minerva* 9:2 (1971), 201. D. S. L. Cardwell, *The Organisation of Science in England*, Revised (London: Heinemann Educational, 1972), Ch. 5.

[73] For X-Club, see Ruth Barton, '"An Influential Set of Chaps": The X-Club and Royal Society Politics 1864-85', *The British Journal for the History of Science* 23:1 (1990): 53–81. Ruth Barton, '"Huxley, Lubbock, and Half a Dozen Others": Professionals and Gentlemen in the Formation of the X Club, 1851-1864', *Isis* 89:3 (1998): 410–44.

[74] Thomas Huxley was a man of science. He was known as a strong supporter of Charles Darwin. Desmond, Adrian. 2015 'Huxley, Thomas Henry (1825–1895), biologist and science educationist.' *Oxford Dictionary of National Biography.* [accessed on 19 Oct. 2018]

[75] Macleod, 'The Support of Victorian Science', 203–204.

[76] Alexander Strange was an army officer and engaged in the great trigonometrical survey in India. After his retirement from the army, he was appointed as the inspector of scientific instruments for India in 1861. For his *ODNB* entry, see Trotter, Charles. 2004 'Strange, Alexander (1818–1876), army officer and scientist.' *Oxford Dictionary of National Biography.* [accessed on 19 Oct. 2018] For his biography, see J. G. Crowther, 'Alexander Strange', in *Statesmen of Science* (London: Cresset Press, 1965), 237–69.

[77] Macleod, 'The Support of Victorian Science', 202–204. Cardwell, *The Organisation of Science in England*, Ch 5.

the BAAS formed a committee to consider this issue in December 1868. The committee included Strange himself and four X Club members: Huxley, John Tyndall,[78] Edward Frankland,[79] and Thomas Hirst.[80] Later, Norman Lockyer[81] and Lyon Playfair[82] joined. In March 1869, the committee reviewed the state of public support for physical research and published a report that recommended the formation of a royal commission for a comprehensive inquiry.[83] The request was granted, and the Royal Commission on Scientific Instruction and the Advancement of Science (hereafter, the Devonshire Commission) was appointed to respond to the demand. The chairman was William Cavendish,[84] the seventh Duke of Devonshire, and the secretary was Lockyer. Huxley and Lubbock from the X Club sat on the commission.[85]

The science reform movement was not merely the background for the joint committee for accommodation; Strange was directly involved in the joint committee. He was a delegate of the Meteorological Society, and he, along with other societies' delegates, signed the letter to the Chancellor of the Exchequer in 1871 requesting governmental provision of a building site.[86] As mentioned in the previous section, it was Lubbock, a member of the X

[78] For his *ODBN* entry, see Brock, W. H. 2006 'Tyndall, John (1820–1893), physicist and mountaineer.' *Oxford Dictionary of National Biography.* [accessed on 19 Oct 2018]
[79] For his *ODBN* entry, see Russell, Colin A. 2015 'Frankland, Sir Edward (1825–1899), chemist.' *Oxford Dictionary of National Biography.* [accessed on 19 Oct. 2018]
[80] 'Report of a Committee, Consisting of Lieut.-Col. Strange, F.R.S., Professor Sir W. Thomson, F.R.S., Professor Tyndall, F.R.S., Professor Frankland, F.R.S., Dr. Stenhouse, F.R.S., Dr. Mann, F.R.A.S., W. Huggins, F.R.S., James Glaisher, F.R.S., Professor Williamson, F.R.S., Professor Stokes, F.R.S., Professor Fleeming Jenkin, F.R.S., Professor Hirst, F.R.S., Professor Huxley, F.R.S., and Dr. Balfour Stewart, F.R.S., Appointed for the Purpose of Inquiring into, and of Reporting to the British Association the Opinion at Which They May Arrive Concerning the Following Questions: — I. Does There Exist in the United Kingdom of Great Britain and Ireland Sufficient Provision for the Vigorous Prosecution of Physical Research? II. If Not, What Further Provision Is Needed? And What Measures Should Be Taken to Secure It ?', in *The Report of Thirty-Ninth Meeting of the British Association for the Advancement of Science: Held at Exeter in August 1869* (London: John Murray, 1870), 213–14.
[81] Norman Lockyer was the first editor of *Nature*. For his *ODNB* entry, Meadows, A. J. 2006 'Lockyer, Sir Joseph Norman (1836–1920), astronomer and journal editor.' *Oxford Dictionary of National Biography.* [accessed on 19 Oct. 2018]
[82] Lyon Playfair was a chemist. He was a student of Justus von Liebig and received his PhD from the University of Giessen. He played an important role in the science reform movement in Britain. See, J. G. Crowther, 'Lyon Playfair', in *Statesmen of Science* (London,: Cresset Press, 1965), 105–75. and Cardwell, *The Organisation of Science in England*, Ch. 4 and 5. For his ODNB entry, see Gooday, Graeme J. N. 2016 'Playfair, Lyon, first Baron Playfair (1818–1898), politician and chemist.' *Oxford Dictionary of National Biography.* [accessed on 19 Oct. 2018]
[83] '1870 BAAS Strange Committee Report'. p. 214.
[84] For his ODNB entry, see Thompson, F. M. L. 2004 'Cavendish, William, seventh duke of Devonshire (1808–1891), landowner and industrialist.' *Oxford Dictionary of National Biography.* [accessed on 19 Oct. 2018]
[85] James Kay-Shuttleworth, the founding members of the Manchester Statistical Society, was also a member.
[86] '1871 SSL Council Report', 239.

Club, who, in 1872, brought up for discussion in Parliament the ignored request of the SSL and other societies.

The SSL does not nicely fit the standard account of the science reform movement, which regards the Paris Exhibition of 1867 as the turning point of science policy in Britain.[87] The Paris Exhibition was believed to have brought to light the relative decline of British manufacturing as opposed to its French and German counterparts. Lyon Playfair attributed the fall of industry to weak science in Britain and promoted state support for scientific education for the sake of practical utility.[88] Reformers deployed the belief that scientific research and education should not be separated in order to promote governmental support for scientific research. As the full title of the Devonshire Commission indicates, it considered both 'scientific instruction and the advancement of science'. This standard account primarily discusses the natural sciences, and therefore, the SSL's request apparently does not fit. Unlike chemistry, statistics, understood as a social science, was not likely to foster industrial development. Incidentally, the SSL was not an examination body and had no educational function. This then poses a question regarding the relationship between the SSL and the science reform movement and, more broadly, the relationship between social science and the state during this period. This section examines this question, focusing on *Nature*'s articles and Strange's testimony at the Devonshire Commission.

3-1. *Nature*'s Perception of the Scientific Societies' House Project

Nature was established in 1869, preceding the formation of the joint committee for accommodation by one year. With Norman Lockyer as its editor, *Nature* supported the science reform by demanding governmental support for science. *Nature* regarded Strange as a leading figure of the science reform movement and often published summaries of his arguments on the need for state sponsorship of science.[89] Along this line, *Nature* regarded the SSL's proposal for the cooperation of London-based scientific societies as falling

[87] Macleod, 'The Support of Victorian Science', 200.
[88] Cardwell, *The Organisation of Science in England*, 111–119.
[89] An editorial entitled 'Science Reform' discusses Strange's paper at the British Association for the Advancement of Science. *Nature* (2 Dec 1869). For Strange's paper at the Society of Arts, see, 'The Society of Arts Conference' and 'The Relation of the State to Science' in *Nature* (7 Apr 1870), 575 and 589). Strange's original paper 'On the Proposed Inquiry by a Royal Commission into the Relations of the State to Science' can be found in *Journal of the Society of Arts*, 18:907, 446–455.

within the science reform movement and reported on the development of the SSL's Scientific Societies' House project.

The SSL invited other learned societies in London that had also not been granted accommodation in Burlington House by the government to a meeting on the issue of accommodation. On 28 April 1870, they held the meeting, chaired by Newmarch, then president of the SSL, to discuss whether building a communal house for scientific societies could ease the financial burden of rent.[90] Newmarch appeared to be in favour of forming a joint-stock company to raise building funds while others argued for pressing the government to support science.[91]

On 12 May 1870, *Nature* reported on this meeting in an article titled 'A Building for the Learned Societies', and it praised the SSL's initiative.[92] The article highlighted the importance of improving the financial situation of learned societies and the convenience that the union of several societies would provide. Although *Nature* questioned the proclaimed economic advantage of using a communal building due to the lack of common interests among the societies, it concluded that the government, not the learned societies, was to be blamed for its lack of support for science:

> We scarcely imagine, in fact, that any large number of societies could well be united in one building, and that will be a source of difficulty, especially in a financial aspect. But why should there be any financial difficulty? Surely the erection of one or more buildings for purposes of science is a duty which may well rest with the Government. Now here does the State do so little for science as in this country.[93]

The article did not see the building of 'a palace of science' as merely a financial problem of the SSL and associated societies but rather as 'the welfare and progress of Science in the United Kingdom'.[94]

[90] '1870 Council Report', 207–208.
[91] 'Accommodation for Scientific Societies', *The Athenaeum*, (7 May 1870), 615–616.
[92] 'A Building for the Learned Societies', *Nature*, (12 May 1870), 21–22.
[93] Ibid, 21.
[94] Ibid, 22.

The article in *Nature* praised the SSL for its service to 'the cause of science'.[95] A follow-up report, 'House Accommodation for Learned Societies', on 29 September 1870 saw the development of the project along the same line.[96] The article discussed the position of the Society of Arts in the joint committee.[97] *Nature* observed that the Society of Arts was by far larger than the other associate societies and that the disproportion in size might be an issue. A large society like the Society of Arts would need a large meeting room to accommodate their members, which other smaller societies would not need. It might undermine the fundamental premise of learned societies' common need for a communal building. That said, the presence of the Society of Arts, *Nature* observed, provided 'the opportunity of a bolder enterprise', by which *Nature* meant a governmental provision of a building that could accommodate all learned societies in London. Such a comprehensive project 'is, doubtless, an attractive idea to many minds'.[98] Apparently, the joint committee, on 1 July 1870, did not exclude the comprehensive scheme of the union of all learned societies in London.

Out of enthusiasm for a comprehensive reform of the organisation of science, *Nature* anticipated Guy's paper on the claims of science. In its 'Notes' on 10 November 1870, *Nature* informed its readers that Guy was going to read his paper 'On the Claims of Science to Public Recognition and Support' to the SSL the following week. *Nature* continued, 'We are glad that the attention of such a powerful body as the SSL is to be so authoritatively drawn to such an important subject.'[99]

Although *Nature* welcomed Guy's choice of topic at this point, its positive attitude seemed to shift to an ambiguous one. The week after the SSL's meeting, *Nature* published an article on his paper.[100] The article was primarily a summary of his arguments, but it specifically mentioned the abandonment of a comprehensive plan: 'there no longer remains any place or pretence for a large and comprehensive scientific centre'. [101] *Nature* clearly agreed that science had its claims and appeared to be interested in a comprehensive

[95] Ibid, 21.
[96] 'House Accommodation for Learned Societies', *Nature*, (29 Sep 1870), 429.
[97] Ibid, 429. The Society of Arts is not found in the joint committee's memorial sent to the Chancellor of Exchequer in 1871. '1871 SSL Council Report', 239.
[98] 'House Accommodation for Learned Societies', *Nature*, 429.
[99] 'Notes' *Nature*, (10 Nov 1870), 35.
[100] 'The Claims of Science', *Nature*, (24 Nov 1870), 61–62.
[101] Ibid, 61.

scheme of accommodation. It favourably cited Guy's argument on the merit of science, taking examples from hygiene and chemistry. However, Guy's paper specifically discussed the claims of 'social science' rather than science in general, which led *Nature* to an ambiguous reaction. After summarising his arguments on why the government should support social science, *Nature* concluded:

> These are claims which, we think, the Government will feel bound to recognise, and we wish the cultivators of the Social Societies every success when they come to represent them in the proper quarter. [102]

The sentence '[t]hese are claims which, we think, the Government will feel bound to recognise' indicates that *Nature* was in favour of Guy's argument. In the next sentence, however, *Nature* distanced itself from social science: 'we wish the cultivators of the Social Societies every success when they come to represent them in the proper quarter'. Although it might be merely have been a misspelling of 'Social Sciences', the use of 'Social Societies' instead of learned societies or scientific societies sounds odd and even implies a denial of the scientific nature of such societies. The contrast between 'we' and 'the cultivators of the Social Societies' suggests a boundary between 'we' and 'them'. This impression was confirmed when *Nature* wished 'them' success 'when they come to represent them in the proper quarter'. *Nature*'s support for them was conditional, because, as *Nature* saw it, they no longer represented the demand of the scientific world. On 12 January 1871, *Nature* reported the completion of a building plan for the united scientific societies and, then, no further news on this matter.[103]

3-2. Alexander Strange and the Support for Scientific Societies

While *Nature* associated the SSL with the contemporaneous science reform movement that demanded state support for science, it was noncommittal regarding the promotion of social science. *Nature*'s promotion of the science reform movement was heavily influenced by Strange's arguments on the role of the state in science. As the delegate of the Meteorological Society, Strange was actively involved in the joint committee for

[102] Ibid, 62.
[103] 'Notes' *Nature*, (12 Jan 1871), 213. At this point, the building has a large lecture theatre that would be capable of accommodating 1,200 people and the union of scientific societies included the Society of Arts.

scientific societies' accommodation. An examination of Strange's arguments shows the place of social science in the science reform movement from a different angle. There is no detailed record of the meetings of the joint committee in the RSS archives, but part of his argument can be reconstructed from other sources, such as *The Athenaeum* and a report by the Devonshire Committee.

The Athenaeum's article titled 'Scientific Societies House' reviewed Guy's 1870 paper read at the SSL.[104] In this article, Strange's position was contrasted with that of Guy's and the SSL's. The article admitted the merits of the proposed Scientific Societies' House. The project would benefit 'not only the Statistical, but the other learned Societies interested', and the money saved would be spent 'for purely scientific purposes'.[105] Unlike *Nature*, the article explicitly criticises the SSL. The SSL, the articles observed, entertained 'very limited notions' of 'the real nature of the claims of Science on the public, and how they are to be met'.[106] This probably refers to the SSL's resistance to the idea of government support for science, which was not uncommon in this period. Although the article regarded Guy as having a more 'enlarged and liberal view', it was frustrated with his defensive move that asked only for a building site and willingly promised to take care of building cost.[107] The article also criticised Guy's omission of the Society of Arts from his definition of social science:

> The sketch is indeed meagre, for while the Social Science Association was introduced there was no reference to the Society of Arts, which, for more than a century, has laboured in this department as well as others, and the Chairman of which, Lord Henry Lennox, opened the session last Wednesday, with an address largely dealing with Social Science. The omission is perhaps to be regretted, as in the organisation of any extensive scheme it appears desirable to embrace not only the Social Science Association, but the Society of Arts, which, as Dr Guy showed, includes the greatest number of members, 3,339. [108]

The omission of the Society of Arts was critical because an extensive scheme was impossible without such a large society. In contrast, with the 'limited notions' of Guy and the SSL, Strange 'again appeared as the advocator of the general claims of Science, and

[104] 'The Scientific Societies' House', *The Athenaeum*, (19 Nov 1870), 659.
[105] Ibid, 659.
[106] Ibid, 659.
[107] Ibid, 659.
[108] Ibid, 659.

of more enlarged accommodation'. [109] Strange formulated the problem as the result of 'the want of organization on the part of the Government in dealing with scientific administration'. [110]

As with *Nature*, the article in *The Athenaeum* viewed Guy's plan as too specific and virtually dismissive of the idea of extensive science reform. It regarded Strange as a champion of science reform. To Strange, the issue was of national importance because it derived from a defect in the governmental system. From the first meeting of the joint committee on 28 April 1870, Strange apparently insisted that the issue should be considered at the Devonshire Commission.[111]

Strange's hope was realised, and he gave testimony before the Devonshire Commission on 24 April and 8 May in 1872. His testimony is well known because it greatly influenced the Devonshire Commission and set the tone of the commission's recommendation.[112] Strange stressed the need for a government organisation in charge of science and proposed the creation of a ministry of science and a 'council of science', a consultative council of eminent men of science to advise the government on scientific matters.[113] What is little known to historians is the fact that Strange brought up the SSL and its Scientific Societies' House project in this testimony.[114]

In his reply to a question about the state of scientific societies in Britain, Strange argued that the importance of the societies had been appreciated by the state:

> Of course a scientific society is a private body and therefore it might be held that it had nothing to do with a scheme which, so far as we have gone at present, is strictly a scheme for State agency; but it is a fact, and we must not ignore facts, that the State does assist scientific societies already. Therefore I have not to contend for a principle, because the principle is established that it is fitting that

[109] Ibid, 659.
[110] Ibid, 659.
[111] 'Accommodation for Scientific Societies', *The Athenaeum*, (7 May 1870), 616.
[112] See, Crowther, 'Alexander Strange'. Cardwell, *The Organisation of Science in England*, 125
[113] These points are already raised in the paper read on 15 May 1871. Alexander Strange, 'On the Necessity for a Permanent Commission on State Scientific Questions'. 15:64,' *Journal of the Royal United Services Institution* 15:64 (1871): 537–66.
[114] *Royal Commission on Scientific Instruction and Advancement of Science: Minutes of Evidence, Appendices, Analysis of Evidence*, Volume II. UK Command Papers (C. 958), 1874, 90–92.

> the nation should assist certain bodies organised by private individuals and maintained by private funds for particular purposes. [115]

He asserted that he did not have to contend for the need of state assistance for scientific societies because the state was already aware of that and, in fact, supported some scientific societies despite the fact that they were 'organised by private individuals and maintained by private funds'.

He then called attention to the lack of principle in terms of deciding which scientific societies deserved governmental support. No one in the government was responsible for scientific matters, and decisions were made inconsistently and arbitrarily, which hinted at the exertion of personal influence and favouritism.[116] It was at this point that Strange brought up the Scientific Societies' House project as an illustration of his point:

> …but what I have to do is to show that the principle is only partially and inconsistently, and I think therefore not quite intelligently, applied. I have been engaged for the last two years from time to time as a member of a committee which was formed at the instance of the Statistical Society for the purpose of inquiring (and the inquiry is quite of a general nature) what could be done to enable societies already in existence to house themselves more economically and more conveniently than they are at present housed, and I may say what is very well known to every gentleman present, that a great many scientific societies are very badly housed indeed.[117]

Strange treated the issue within the framework of the country's governmental system of science support rather than the mere financial difficulties of individual societies.

Strange did not make a concession and insisted on science reform. Although the joint committee, led by the SSL, suggested establishing a building fund itself and demanded of the government merely a building site, Strange did not approve of that strategy:

[115] Ibid, 90, col. 10,443.
[116] Ibid, 90, col. 10,443.
[117] Ibid, 90, col. 10,442.

> In our committee there were one or two modes suggested of meeting this difficulty, one was that we should merely ask the Government for the site on which we should erect a building, and a company should be formed, I think, with shares to pay for the erection of the building, and that a rent should be charged, and that the whole should be so arranged as to pay the shareholders five per cent. It was a joint stock jobbing sort of proposal which I did not assent to at all. I did not think that it was the right way of doing it, and I should be satisfied now with having called the attention of the Royal Commission to the subject as one which I think forms a portion of the inquiry that they are engaged in.[118]

Strange insisted that, in principle, scientific societies deserved support from the state, and thus, the building should have been provided to accommodate all of those homeless societies, which would have been between 15 and 20 societies.[119] Strange clearly supported a bigger scheme than Guy's and promoted the advantage of congregating scientific societies. While Strange was aware of possible criticism of the lack of common goals among such societies, he insisted that the lack of common interest was the result of a lack of a central meeting place, not the other way around.[120]

Strange clearly saw the SSL's project within the framework of a comprehensive science reform that, in principle, embraced every branch of science. Strange's proposed Council of Science proves this point from a different angle. In his second appearance at the Devonshire Commission, Strange submitted a sketch of a Council of Science—a council that would consist of 30 men of science in a broad sense.[121] A statistician did have a place in Strange's scheme of science reform, but it was not a special branch of science.

4. The Claims of Science Called 'Social'

Guy apparently shared a common objective with *Nature* and Strange: the state should support science. However, his paper aimed to establish a specific claim distinct from the general claim of governmental support for science; that is, social science should be

[118] Ibid, 91, col. 10,445.
[119] Ibid, 90, col. 10,443.
[120] Ibid, 90–91, col. 10,443.
[121] Ibid, 130. The Council was envisaged to include the following members: Pure mathematician 1, mixed mathematician 1, chemists 2, meteorologist 1, physical astronomer 1, metallurgist 1, geologist 1, physicists 2, naturalist 1, physician 1, surgeon 1, physiologist 1, naval architect 1, civil engineer 1, mechanical architect 1, mining architect 1, statist 1, royal engineer officers 2, royal artillery officers 2, royal navy officers 2, infantry officers 2, merchants 2, agriculturist 1.

recognised and supported by the state.[122] The structure of Guy's proposal clearly shows his intention. It was divided into six sections: 1. 'Of Science'; 2. 'Of the Science called "Social"'; 3. 'Of Scientific Societies and Associations'; 4. 'Of the Claims of Science to Public Recognition and Support'; 5. 'Of Precedents'; and 6. 'Claims of the Statistical Society: a Building Site'.[123] His paper defined the SSL as a cultivator of the 'science called social', examined the nature of social science, outlined the benefits to the state derived from the cultivation of social science, and reviewed the precedents of state patronage of scientific societies. It maintained that the SSL and its associate societies deserved encouragement from the state and that the provision of a building site was a reasonable measure. While *Nature* and Strange saw the SSL's scheme within the framework of general scientific reform, Guy's proposal explicitly narrowed its scope to that of 'social science'. His move raises the question of why he deployed the word 'social science' and what he aimed to achieve. The answer to the question will shed a new light on the status of social science in this period.

The word 'social science' was not new in this period, as the SSA had already been founded in 1857 and was widely used in the 1860s. [124] Guy's use of social science to describe statistics and the SSL also had precedents. Newmarch proposed the name 'Social Science Institute' for his proposed federation of scientific societies in 1862, and Guy's own paper in 1865 defined the SSL as the first scientific society dedicated to the cultivation of social science in Great Britain.[125] Guy's 1870 paper explicitly refers to these two cases.

It is beneficial to note that whether the SSL was primarily dedicated to social science was not unanimously agreed upon.[126] Leone Levi, an active member of the SSL, classified the

[122] Guy, 'On the Claims of Science to Public Recognition and Support,' 433.
[123] Ibid.
[124] See E. M. Yeo, 'Social Science and Social Change: A Social History of Some Aspects of Social Science and Social Investigation in Britain 1830-1890.' (PhD thesis, University of Sussex, 1972), Ch. 5.
[125] Newmarch's letter was printed in the council report of 1863. '1862 Communication from William Newmarch'. Guy's 1865 paper is the following: William Augustus Guy, 'On the Original and Acquired Meaning of the Term "Statistics," and on the Proper Functions of a Statistical Society: Also on the Question Whether There Be a Science of Statistics; and, If so, What Are Its Nature and "Social Science"', *Journal of the Statistical Society of London* 28:4 (1865): 478–93.
[126] 'Proceedings of Societies: Statistical Society', *Journal of Social Science* Nov 1865-Oct 1866 (1866),. 215.

SSL as 'mathematical' in his paper on the progress of scientific societies.[127] Likewise, *Nature* categorised 'statisticians, actuaries and mathematicians'[128] in the same group when it questioned the economic advantage of a federation among scientific societies due to the lack of common interest among participating societies. It observed that '[t]he statisticians, actuaries, and mathematicians might well meet together, and so it would be fitting that the antiquaries and archaeologists should have a common habitation. But not so those that have nothing in common.'.[129] Guy's use of social science in the demand for accommodation was not strange but not inevitable either.

Guy's paper first defined science in general and distinguished it from learning and art. Science, Guy argued, removed ignorance, uncertainty and waste from art. '[W]hat was an art practised in ignorance, uncertainty, and waste' can be transformed into 'a science replete with reasonable rules and principles, the parent of new methods of procedure, simpler, shorter, and more economical'.[130] Guy appears to deploy the same line of argument that was common in the science reform movement: scientific research eventually would improve art and help the development of industry.

After reviewing the nature of science in general, Guy observed that different branches of science developed at different speeds and to different degrees. This observation of diversity among scientific branches was a cautious move to secure some space for social science in the scientific world. Although an apparent difference between 'social science' and other forms of science might create doubts as to the scientific nature of social science, Guy attributed it to the diversity of science.

In a next step, Guy moved to a historical review of social science in Great Britain:

[127] Leone Levi 'On the Progress of Learned Societies: Illustrative of the Advance of Science in the United Kingdom during the Last Thirty Years', in *Report of the British Association for the Advancement of Science Held at Dundee in September, 1867 (Notices and Abstracts of Miscellaneous Communications to the Sections)* (London: John Murray, 1869), 169–73,. and Leone Levi, 'A Scientific Census', *Nature* (25 Nov 1869), 99–100.
[128] 'A Building for the Learned Societies', *Nature*, (12 May 1870), 21.
[129] Ibid, 21.
[130] Guy, 'On the Claims of Science to Public Recognition and Support,' 435.

> It is not a little remarkable that a period of one hundred and seventy years (from 1660, when the Royal Society was founded, to 1834, when this, the Statistical Society, came into existence) should have elapsed without any distinct recognition of the great branch of human knowledge to which we now give the appropriate and expressive name of 'Social Science'. The 'natural knowledge' which the Royal Society was founded to improve did not comprise the study of man himself as the unit of communities and nations, but only as an organised living being.[131]

Thus, Guy implicitly claimed that the SSL was the first society that cultivated 'the great branch of human knowledge' or 'Social Science'; by contrast, the Royal Society was founded to improve 'natural knowledge'. Guy's distinction between 'human knowledge' and 'natural knowledge' was based on the difference in the subject of study. The SSL studied 'man himself as the unit of communities and nations' while the Royal Society excluded the study of man himself except 'as an organised living being'.

It should be noted that Guy's comparison created an impression that the SSL was on par with the Royal Society, the most prestigious scientific society in England. It is a rather surprising claim, but he continued to push it through historical examination of the origin of social science in Great Britain:

> Assuming, then, the existence of a social science, of which many of the materials had been in process of collection for three centuries, but of which the full and complete recognition dates from the foundation of this Society in 1834, I proceed to show that this new science of man has had a history in keeping with that of the "natural knowledge" which the Royal Society was established to improve and promote. The Royal Society was founded in 1660, and had continued its multifarious scientific labours till 1831, when it may be said to have given birth to the British Association for the Advancement of Science. In this nineteenth century, the march of events is quicker; and accordingly the science which had its first embodiment in the Statistical Society of 1834, found its British Association in the Social Science Association of 1857—an interval of less than a quarter of a century.[132]

Guy conceded that the Royal Society had a much longer history than the SSL. However, he asserted that social science 'has had a history in keeping with' the cultivation of the 'natural knowledge'.[133] Social science had existed for three centuries, he continued,

[131] Ibid, 436.
[132] Ibid, 437.
[133] Ibid, 437.

although it did not gain formal recognition until the establishment of the SSL. Guy saw the commencement of parish registers in 1538 as the advent of a new field of knowledge.[134] The study of London bills of mortality by John Graunt[135] in 1662 and William Petty[136] in 1683 'unconsciously' created 'a new subject of study not underserving the name of science'.[137] Despite the relatively short history of the SSL, Guy 'discovered' the comparable history of social science dating back to at least the publication of Graunt's work in 1662—making social science as old as the establishment of the Royal Society in 1660. However, Guy described Graunt's and Petty's works as what only 'unconsciously' had laid the foundation of social science but failed to establish formal recognition, which the establishment of the SSL provided for the first time in British history. This tactful move enabled him to reconcile his two apparently contradicting claims that social science had a matching history with that of natural science and that the relatively new SSL was the first scientific society to cultivate social science.[138]

Guy continued to promote the notion that the SSL was the social science equivalent of the Royal Society. He took up the relationship between the Royal Society and the BAAS and assumed that the former gave birth to the latter. He likened this relationship to that of the SSL and the SSA. 'In this nineteenth century', Guy wrote, 'the march of events is quicker; and accordingly the science which had its first embodiment in the Statistical Society of 1834, found its British Association in the Social Science Association of 1857—an interval of less than a quarter of a century.'[139] Guy was drawing two lines for the development of knowledge: the development of natural knowledge and that of human knowledge. The Royal Society had been formed to improve natural knowledge, but, as the cultivation of natural knowledge progressed, it needed another form of association, the British association. Likewise, the cultivation of human knowledge first needed the SSL and, then, the SSA.

[134] Ibid, 436.
[135] John Graunt and William Petty are considered as founders of political arithmetic. For his *ODNB* entry, see Lewin, C. G. 2004 'Graunt, John (1620–1674), statistician.' *Oxford Dictionary of National Biography*. [accessed on 19 Oct. 2018]
[136] For Petty's biography, see Chapter Two footnote 42.
[137] Guy, 'On the Claims of Science to Public Recognition and Support,' 436.
[138] Ibid, 437.
[139] Ibid, 437.

While Guy allocated the field of natural knowledge to the jurisdiction of the Royal Society, he claimed the SSL had exclusive control over human knowledge, which social science produced. Guy moved to define social science as a common principle that could embrace many other scientific societies in London. He argued that both the SSL and SSA shared a common goal, the improvement of man's condition:

> Our two societies have a common aim—the improvement of man's condition physical, intellectual, and moral, through the patient heaping up, intelligent sorting, and critical examination of the elements of a knowledge which, properly applied, is power indeed.[140]

Social science had, Guy argued, something to do with groups of people, and it did not admit application at the individual level. This character is evident in the works of actuaries as well as statisticians.

> Of this "social science" let me further observe, that it differs from most other sciences chiefly in this, that its units are of variable magnitude, and that its truths and principles, gathered from large assemblages of such units, admit of application only to like collections of facts, not to the individual units themselves.[141]

Guy first connected the SSL to the SSA and, then, the former to the Institute of Actuaries. Those three societies should be 'under the same roof, working side by side, in harmonious co-operation, with the one common aim—"the improvement of man's estate"'.[142] Guy further expanded the definition of social science so that it could embrace other societies: 'But is it not obvious that this principle of association admits of being carried much farther, so as at length to embrace in one group, under one roof, all the societies or associations that make man himself, as a physical and moral unit, the object of their study?'[143] Social science, in this sense, was defined as the study of man himself, as a physical and moral unit, which would welcome the participation of the Ethnological Society, the Anthropological Society, the Archaeological Society, the Epidemiological Society, and a society relating to hygiene.

[140] Ibid, 437.
[141] Ibid, 438.
[142] Ibid, 438.
[143] Ibid, 438.

Guy then argued why social science deserved the public's support and recognition. He began by discussing the merits of scientific research in general. Science, Guy argued, brought honour and profit to the state and promoted manly virtues, such as the love of truth, patient industry, and self-denial, 'that give strength and solidity to a people'. [144] He was aware that these abstract advantages were not strong enough to convince the general public and, thus, came to dwell on the utility of science. [145] Asserting that scientific research had practical utility and contributed to the development of industry was a common strategy in the science reform movement. Following this strategy, Guy enumerated examples of how pure science brought practical utility to the state and all mankind: hygiene saved lives that otherwise would be lost; chemistry made scientific discoveries out of the love of truth but eventually brought profit to manufacturers; and photography and the electric telegraph were the offspring of pure science. [146]

Guy shifted from science in general to social science and its special claims. [147] He enumerated examples from social science: Rowland Hill, [148] a member of the SSL, studied the increase in the number of posted letters and helped the nation institutionalise the penny post, which, Guy observed, offered moral, social, and economic advantages; [149] social scientific research of the dietaries in prisons achieved a considerable cost reduction; [150] and the Institute of Actuaries' work had been easing the popular anxieties of life.

Guy then touched on the SSL's service to the government and argued that it saved government expense. The SSL had been promoting scientific discussions on topics that had great relevance to the legislature, and these discussions were, Guy argued, 'in many cases a direct saving of expense to the nation, sometimes by rendering some costly return

[144] Ibid, 442.
[145] Ibid, 442.
[146] Ibid, 442–444.
[147] Ibid, 444.
[148] For his ODNB entry, see Perry, C. R. 2017 'Hill, Sir Rowland (1795–1879), postal reformer and civil servant.' *Oxford Dictionary of National Biography*. [accessed on 19 Oct. 2018]
[149] Guy, 'On the Claims of Science to Public Recognition and Support,' 444.
[150] This research probably refers to Guy's own works. For details of Guy's works on the dietary of prisoners, see Anne Hardy, 'Development of the Prison Medical Services, 1774-1895', in *The Health of Prisoners: Historical Essays*, ed. Richard Creese, J. Bearn, and William F. Bynum (Amsterdam; Atlanta, GA: Rodopi, 1995), 59–82. and Martin J. Wiener, 'The Health of Prisoners and the Two Faces of Benthamism', in *The Health of Prisoners: Historical Essays*, ed. Richard Creese, J. Bearn, and William F. Bynum (Amsterdam; Atlanta, GA: Rodopi, 1995), 51–55.

unnecessary, sometimes by doing the necessary work of condensation and analysis'.[151] He emphasised the importance of analysis as well as data collection. Collected data would be a waste of paper and money without the analyses in which members of the SSL had been individually engaged. The SSL critically examined such analyses and published them in the *JSSL* at its own cost. '[T]hus the public and the Government save money and become possessed of wholesome and fruitful truths.'[152] Guy illustrated his points with examples: Hill's paper on the penny post,[153] Newmarch's supply of electoral statistics and economic statistics,[154] William Hodge's papers on rising mortality in military and naval operations,[155] and William Lumley's papers on the Poor Law.[156] In conclusion, Guy affirmed that 'while they [works done by some members of the SSL] have benefited the public, they have effected a direct and appreciable saving of money which, but for them, the Government itself must have expended'.[157] Guy noted that natural science would help industrial development, and, by contrast, he emphasised the public nature of social science and described it as almost complementary to government administration.

Guy discussed extensively why the SSL and social science deserved government support. He proceeded to review the precedents of state support for scientific societies and finally concluded that the SSL and its associates deserved a building site.

[151] Guy, 'On the Claims of Science to Public Recognition and Support,' 444.
[152] Ibid, 444–445.
[153] Rowland Hill, 'Results of the New Postage Arrangements', *Journal of the Statistical Society of London* 4:2 (1841): 85–99.
[154] William Newmarch, 'On the Electoral Statistics of the Countries and Boroughs in England and Wales During the Twenty-Five Years from the Reform Act of 1832 to the Present Time', *Journal of the Statistical Society of London* 20:2 (1857): 169–234; William Newmarch, 'On the Electoral Statistics of the Counties and Boroughs in England and Wales During the Twenty-Five Years from the Reform Act of 1852 to the Present Time', *Journal of the Statistical Society of London* 20:3 (1857): 314–40; William Newmarch, 'On the Electoral Statistics of England and Wales, 1856–8 Part II: Results of Further Evidence', *Journal of the Statistical Society of London* 22:1 (1859): 101–68; William Newmarch, 'On the Electoral Statistics of England and Wales, 1856–8: Memorandum with Reference to Certain Portions of the Paper Read in February, 1858', *Journal of the Statistical Society of London* 22:2 (1859): 297–305.
[155] William Barwick Hodge, 'On the Mortality Arising from Naval Operations', *Journal of the Statistical Society of London* 18:3 (1855): 201–21; William Barwick Hodge, 'On the Mortality Arising from Military Operations', *Journal of the Statistical Society of London* 19:3 (1856): 219–71.
[156] W. G. Lumley, 'On the Present State of the Administration of the Relief to the Poor in the Metropolis, and the Charge of the Poor Rate Theron', *Journal of the Statistical Society of London* 21:2 (1858): 169–97; W. G. Lumley, 'On the Present State of The Administration of Relief to the Poor in the Metropolis, and Charge of the Poor Rate Thereon', *Journal of the Statistical Society of London* 21:3 (1858): 308–38.
[157] Guy, 'On the Claims of Science to Public Recognition and Support,' 445. [] is inserted for clarification.

5. Conclusion

This chapter has examined the SSL's attempt to acquire governmental patronage during 1860–1873. It uncovered the fact that the Scientific Societies' House project, led by the SSL from 1870 to 1873, was an offspring of the contemporaneous science reform movement and that Guy's use of 'social science' made this project an exceptional instance in the movement.

This chapter found that the SSL experienced a sudden increase in membership in 1873 and argues that it was directly caused by its council's circular asking for help increasing fellows' membership. This chapter further showed that the SSL started a systematic recording of the number of members in 1860. This finding reminds us that the members themselves were concerned with the number of members because it was an indicator of the SSL's financial state. The SSL viewed insufficient funds as an obstacle to expanding its activities and the heavy burden of rent as a major financial issue to be tackled. The SSL formulated three options to lift the burden: mutual help with other societies, receipt of governmental support, and the addition of new members. The first two options were primarily pursued, but the failure of the second option became clear in 1872, which led to the SSL taking the third option seriously in 1873.

This chapter pointed out the neglected original context of the Scientific Societies' House project. *Nature* and Strange clearly saw this project in the context of comprehensive science reform, which was embodied by the Devonshire Commission. Guy's proposal of the Scientific Societies' House in 1870 took advantage of the trend of the times but differed from it in respect to the place of social science in the scientific world. The contrast between Strange and Guy shows their difference in understanding the role of social science as well as the objectives of science reform. Although Strange did admit that statistics was a proper branch of science and included a statistician within his proposed Council of Science, statisticians occupied a relatively marginal place in science.

By contrast, Guy was particularly concerned with the promotion of social science. He claimed that social science had a proper domain in science, distinct from art, learning,

and literature.[158] He divided scientific knowledge into two types—human knowledge and natural knowledge—and the SSL was, Guy argued, in charge of the former whilst the Royal Society the latter. His move was an attempt to establish his claims that social science had an intellectual authority and competence no lesser than the natural science represented by the Royal Society. As Thomas Huxley pointed out in an interview with Strange at the Devonshire Commission,[159] the Royal Society was the most prestigious scientific society in Great Britain in this period, and thanks to this privilege, it had obtained an accommodation by the state and was responsible for distributing governmental scientific research funds.[160] The SSL evidently did not enjoy such privilege. When Guy treated the SSL as if it were an equivalent to the Royal Society in the domain of social science, he was demanding the acknowledgement of its status and privilege rather than just merely describing public consensus.

By doing so, Guy was not merely demanding the privileges of the Royal Society for the SSL. The Royal Society was supposed to be in charge of science in general, and that was the source of its privilege. However, Guy asserted that there were many branches of science outside the Royal Society's jurisdiction and that 'social science' could embrace those branches. His assertion appeared to be an ambitious move to establish the demarcation between natural science and social science within the scientific world that appears self-evident today but might not have been the case in 1870. Guy's proposal for establishing the Scientific Societies' House primarily for societies cultivating the branch of social science may be compared to the establishment of the British Academy out of the Royal Society in 1902.

Guy's use of social science had a practical reason behind the project he was promoting. He was likely to be aware of sceptics who doubted the advantage of united societies and criticised their lack of an integrating principle. Social science, defined as the study of man in society, provided the principle that formed the basis for a wide range of London-based homeless scientific societies within the project. This definition, however, has more than practical importance for my thesis. My entire thesis attempts to uncover the historical foundation of what Ian Hacking calls 'making up people'. In this respect, it is worth

[158] Ibid, 440.
[159] *Royal Commission on Scientific Instruction and the Advancement of Science*, 90, cols. 10469–10470.
[160] Roy M. MacLeod, 'The Royal Society and the Government Grant: Notes on the Administration of Scientific Research, 1849–191', *The Historical Journal* 14:02 (June 1971): 323–358.

noting that Guy's definition of social science, which apparently included epidemiology and hygiene, is similar to what Hacking calls the 'human sciences', which produce classifications of human beings and lay a basis for 'making up people'.[161]

Guy's paper formulates the relationship between the state and social science, or statistics, in particular. Although Guy argued for the utilities of science, social science appeared to benefit the state and the public in a rather different way from that of natural science. Guy described the SSL's activities as being complementary to the government. The members of the SSL offered analyses of data collected by the state, which the state should have done and without which the collected data would have been wasted. Moreover, such analysis provided the foundation for legislative discussion. The SSL, as Guy saw it, reduced governmental expense and provided a reliable basis for policy making. It is worth noting that what Guy emphasised was its relevance to the legislative aspects of government, although the SSL had been cooperating with the state in administrative works such as the Census. Guy's framework of the relationship between statistics and the state appeared to rely on the assumed division of labour between statistician and statesman. While the actuary pursued both truth and practical application, the statistician had to leave the latter part to the hands of the statesman.[162] Guy's paper suggests that, in his conception of statistics, statistics was a policy science and a statistician was an advisor to legislators for social issues. By contrast, Strange conceived that a statistician was only one of the thirty members of his proposed Council of Science. Guy's attempt to establish a complementary relationship between statistician and statesman is important in respect to the emergence of social scientific experts.

This chapter discussed the relationship between the state and statistics in relation to the SSL's request for government support during 1860–1873—a request that was rejected by the government. The SSL and associated societies then attempted to raise a building fund by forming a joint-stock company. However, in June 1873, Farr, then president of the SSL, had to announce that the Scientific Societies' House project had to be 'postponed'.[163] The project was ultimately a failure and produced no material results. However, it left conceptual offspring. The project, as a part of a larger movement, forced the government and the public to reconsider the relationship between the state and

[161] Ian Hacking, 'Kinds of People: Moving Targets', *Proceedings of the British Academy* 151 (2007), 293.
[162] Guy, 'On the Claims of Science to Public Recognition and Support,' 437.
[163] '1873 SSL Council Report', 353.

scientific research. For statistics and, specifically, the SSL, it led Guy to answer the question of the role of statistics. Guy had begun to write the history of statistics in 1865 and extensively used historical accounts of the emergence of statistics to answer this question, which eventually led him to redefine what a statistician should have been. The next chapter discusses the creation of statisticians' unique scientific ethos.

Chapter Five

Virtuous Statisticians and Their Learned Blindness

The Statistical Society of London and the Shaping of Social Scientists, 1870–1875

1. Introduction: The Blindness of Statisticians

Victorian statisticians were in a battle against the suspicion cast on their intellectual and moral integrity. While the Statistical Society of London (SSL) fought to claim its scientific merits, in 1851, it had to admit that statisticians were often seen as frauds who performed 'a mere kind of *hocus pocus*, as a mode of marshalling figures which can be arrayed in any way the marshaller may please'.[1] In 1854, Charles Dickens[2] attacked the very nature of statistical observation and mocked the shallowness of statisticians in his social satire *Hard Times*. Thomas Gradgrind, the main character of the story, is a statistics enthusiast with a room filled with blue books in which 'the most complicated social questions were cast up, got into exact totals, and finally settled—if those concerned could only have been brought to know it'.[3] His room is described as an observatory that studies human beings in society, but it is strangely isolated. Dickens writes:

> As if an astronomical observatory should be made without any windows, and the astronomer within should arrange the starry universe solely by pen, ink, and paper, so Mr. Gradgrind, in his Observatory (and there are many like it), had no need to cast an eye upon the teeming myriads of human beings around him, but could settle all their destinies on a slate, and wipe out all their tears with one dirty little bit of sponge.[4]

[1] 'Seventeenth Annual Meeting of the Statistical Society of London', *Journal of the Statistical Society of London* 14:2 (1851), 103. Emphasis in original.
[2] Charles Dickens was a popular novelist. Slater, Michael. 2014 'Dickens, Charles John Huffam (1812–1870), novelist.' *Oxford Dictionary of National Biography*. [accessed on 22 Oct. 2018]
[3] Charles Dickens, *Hard Times for These Times*, ed. Kate Flint (London ; New York: Penguin, 2003), 95.
[4] Ibid, 95.

Dickens highlights the blindness of statisticians. Gradgrind reads, writes, and calculates, but he does not see the misery of the people around him. His room is wanting of actual humans; they are replaced by printed numbers on paper.

This was absurd, or so thought Dickens. He seemed to acknowledge that the theoretical astronomer could study the representation of stars on paper without actually looking up at the sky, as astronomical observation itself became a mundane task left to mere observers.[5] Similarly, it would seem that statisticians aspired to replace 'the teeming myriads of human beings' with statistical documents and study society without casting their eyes on the actual lives of people, provided that the statistical data were accurate. Dickens, though, apparently did not feel this was so legitimate.

Dickens' caricature of complacent statisticians was apparently motivated by a sense of morality. In his eyes, statisticians appeared to be heartless, lazy, and incompetent. Statisticians failed to see the suffering of people that was right in front of their eyes. From the statisticians' point of view, however, things appeared different. At the fourth International Statistical Congress (ISC) held in London in 1860, Prince Albert defended statisticians' competence and their unintuitive way of seeing.[6] While numerical figures might have appeared 'dry and unpalatable to the general public', those 'simple arithmetical expressions' that represented 'living facts' were, Albert insisted, capable of 'arousing the liveliest sympathy' in statisticians.[7] Unlike Dickens' picture of unfeeling armchair statisticians, Albert presented statisticians as sympathetic and industrious. To become a statistician, one needed more than just 'some skill to draw any definite and safe conclusions from the mass of material', as one also needed '[m]uch labour' to 'wade through endless columns of figures' and 'much patience to master them'.[8] Statisticians were even virtuous, Albert suggested, as they had to resist the temptation to abuse statistics in favour of their 'theories and opinions' because they could easily take

[5] Simon Schaffer, 'Astronomers Mark Time: Discipline and the Personal Equation', *Science in Context* 2:1 (1988): 115–45; William J. Ashworth, 'The Calculating Eye: Baily, Herschel, Babbage and the Business of Astronomy', *The British Journal for the History of Science* 27:4 (1994): 409–41; Kevin Donnelly, 'On the Boredom of Science: Positional Astronomy in the Nineteenth Century', *The British Journal for the History of Science* 47:3 (2014): 479–503.
[6] 'The Address of the Prince Consort on Opening as President the Fourth Session of the International Statistical Congress', *Journal of the Statistical Society of London* 23:3 (1860), 278.
[7] Ibid, 278.
[8] Ibid, 278.

advantage of confused people who did not have the patience or skill 'in reading up and verifying the statistical figures'.[9]

By the mid-nineteenth century, Victorian statisticians became confident in the relevance of their expert knowledge to government administration. The early members of the SSL were often concerned with social problems, such as the conditions of the working class, and were involved in social reform.[10] After the establishment of the Social Science Association (SSA) in 1857, the SSL kept in touch with this social reform–oriented group.[11] However, statisticians' involvement and alleged scientific expertise in the practical treatment of social issues also aroused suspicion, if not outright hostility, regarding their intellectual and moral quality from non-statistical social reformers who believed they spoke on behalf of vulnerable people whose lives would be affected by statisticians' analysis. Statisticians had to defend themselves and establish their practical and intellectual superiority over potential competitors, such as philanthropists.

The emergence of the social scientist as a distinct identity in the mid-nineteenth century has been primarily studied in relation to their claim of expertise and to the middle-class man's strategic self-promotion. Goldman points out that the banner of social science attracted the emerging middle class, as it supposedly enabled its members to assert their intellectual superiority over religious philanthropists and traditional ruling classes, while those newcomers often faced persistent resistance from the old establishment.[12] Yeo's work illustrates how middle-class men dominated the position of social scientists and marginalised other forms of social knowledge produced by working-class and middle-class women.[13] As I have discussed in Chapter Three, Agar sees statisticians' theoretical

[9] Ibid, 278–279.
[10] Victor L. Hilts, *Statist and Statistician* (New York: Arno Press, 1981), 174.
[11] Lawrence Goldman, *Science, Reform and Politics in Victorian Britain: The Social Science Association, 1857-1886* (Cambridge: Cambridge University Press, 2002), 277–278.
[12] Lawrence Goldman, 'The Social Science Association, 1857-1886: A Context for Mid-Victorian Liberalism', *The English Historical Review* 101:398 (1986), 132–133. Lawrence Goldman, 'Experts, Investigators, and the State in 1860: British Social Scientists through American Eyes', in *The State and Social Investigation in Britain and the United States*, ed. Michael J. Lacey and Mary O. Furner, (Cambridge: Cambridge University Press, 1993)..
[13] Eileen Yeo, *The Contest for Social Science: Relations and Representations of Gender and Class* (London: Rivers Oram, 1996), Ch. 4 and 5 in particular.

discussion regarding the management of data as their strategic move to secure their positions in the governmental machinery.[14]

However, statisticians' construction of self was more than a strategic move to serve their political interests since, as Albert's address to the ISC suggests, it created a new type of scientific self that statisticians firmly embraced. This poses the question of how statisticians harmonised their sympathy for living humans with their apparently cold gaze at statistical data and cultivated a distinctive ethos of social science that moulded their way of seeing, knowing, and being. To answer this question, this chapter examines William Guys' endeavour in the 1870s to present John Howard as a founding father of the SSL and a model statistician to be imitated.

2. Inventing John Howard the Statistician

The popularisation of statistics in early nineteenth-century Britain posed a question as to the role of statisticians. As Goldman and Poovey each show, J. R. McCulloch submitted a model of the division of labour between statistician and political economist in 1824.[15] In McCulloch's design, statisticians aimed to 'describe the condition of a particular country at a particular period' while political economists aimed to 'discover the causes which have brought it into that condition'.[16] In other words, statisticians collected facts while political economists produced causal knowledge by comparing different times and places.[17] The relationship between statisticians and political economists was likened to the one between 'the mere observer' and 'the physical astronomer'.[18] Goldman argues that McCulloch's idea that statisticians should confine themselves to the collection of

[14] Jon Agar, *The Government Machine : A Revolutionary History of the Computer* (Cambridge, MA; London: MIT Press, 2003), Ch. 3.
[15] John Ramsay McCulloch, *A Discourse on the Rise, Progress, Peculiar Objects, and Importance, of Political Economy: Containing an Outline of a Course of Lectures on the Principles and Doctrines of That Science* (Edinburgh: Archibald Constable and Company, 1824), 75. Cited in Mary Poovey, *A History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society* (Chicago: University of Chicago Press, 1998), 266, 304–305. and Lawrence Goldman, 'The Origins of British "Social Science": Political Economy, Natural Science and Statistics, 1830-1835', *The Historical Journal* 26:3 (1983), 611–613.
[16] McCulloch, *A Discourse on the Rise, Progress, Peculiar Objects, and Importance, of Political Economy*, 75.
[17] Ibid, 75.
[18] Ibid, 75.

facts influenced the SSL's policy to exclude speculative discussion from the society's publications.[19] The SSL's 1840 Council Report was critical of the rule, but the idea apparently did not subside for a long time. As late as 1858, in a paper presented to the SSA as a representative of the SSL, John Towne Danson[20] adopted a similar view to McCulloch's and assigned the task of data collection to 'the statist' while assigning that of reasoning to 'the social economist'.[21]

The confinement of statisticians to data collection was increasingly questioned in the 1860s and 1870s, as the SSL claimed to be a champion of social sciences. As Chapter Four has demonstrated, Guy used the *Journal of the Statistical Society of London* (*JSSL*) as a platform to disseminate the idea of statistics as a comprehensive social science, for example, in his 1865 and 1870 papers.[22] During this campaign, he branded statisticians as empirical social scientists who would not only analyse statistical data but also help social policy making. To support his claim, Guy used an unexpected figure: John Howard, a famous eighteenth-century British prison reformer.

Guy's assertion that Howard was a statistician probably sounded new to Guy's contemporaries since Howard was primarily known as a philanthropist and prison reformer. It was an unfamiliar idea even to Guy's fellow statisticians in the SSL, as the society normally did not include John Howard in its scientific genealogy. The first volume of the *JSSL* reviewed a brief history of statistics in Britain and counted John Sinclair,[23]

[19] Goldman, 'The Origins of British "Social Science",' 612.
[20] For Danson's biographical information, see Chapter Two footnote 227.
[21] J. T. Danson, 'On the Importance of the Office and Duty of the Statist in Relation to Social Science', in *Transactions of the National Association for the Promotion of Social Science, 1858*, ed. George W. Hastings (London: John W. Parker and Son, 1859), 549.
[22] William Augustus Guy, 'On the Original and Acquired Meaning of the Term "Statistics," and on the Proper Functions of a Statistical Society: Also on the Question Whether There Be a Science of Statistics; and, If so, What Are Its Nature and "Social Science"', *Journal of the Statistical Society of London* 28:4 (1 December 1865): 478–93; William Augustus Guy, 'On the Claims of Science to Public Recognition and Support; With Special Reference to the So-Called "Social Sciences."', *Journal of the Statistical Society of London* 33:4 (1870): 433–51. For detailed discussion, see Chapter Four of this thesis.
[23] For Sinclair's biographical information, see Chapter One footnote 3.

Frederick Morton Eden,[24] and Patrick Colquhoun[25] as early pioneers.[26] The SSL further included the tradition of political arithmetic within the history of statistics and named William Petty[27] and others as its intellectual ancestors.[28] However, there was no mention of Howard. Guy must have been aware that his assertion was an unconventional view and did his best to defend his claim that Howard was, in fact, a statistician.

Guy's interest in Howard can be traced back to 1850, when Guy anonymously published an article defending Howard from Thomas Carlyle's[29] disparagement in his *Latter-Day Pamphlets*.[30] However, it was in the 1870s when Guy began to extensively discuss the achievements of Howard and present him as a model statistician.[31] Guy's first mention of Howard as a statistician was in his 1870 paper, when Guy claimed Howard's method of inquiry was the model for the SSL.[32] Guy further developed this claim in 1873. He took advantage of the centenary of Howard's appointment as the high sheriff of Bedfordshire in 1773 and published a paper titled 'John Howard as Statist' in the *JSSL*, which was, as the title suggests, solely dedicated to demonstrating the claim that Howard was a statistician.[33] Later that same year, Guy became the president of the SSL and repeated his point regarding Howard in the society's inaugural address.[34] In 1875, Guy again

[24] Frederick Morton Eden was a pioneer in social investigation. His work The State of the Poor is considered one of the pioneering works in the history of poverty survey. For Eden's *ODNB* entry, see Winch, Donald. 2004 'Eden, Sir Frederick Morton, second baronet (1766–1809), insurance company manager and writer on the state of the poor.' *Oxford Dictionary of National Biography*. [accessed on 22 Oct. 2018]
[25] Patrick Colquhoun was a magistrate and the founder of the Thames Police. He was a prolific writer on social issues and his use of numerical information in his writings earned him the reputation in the SSL as one of the pioneers of statistics. For Colquhoun's *ODNB* entry, Paley, Ruth. 2008 'Colquhoun, Patrick (1745–1820), magistrate and a founder of the Thames police.' *Oxford Dictionary of National Biography*. 22 Oct. 2018.
[26] 'Introduction', *Journal of the Statistical Society of London* 1:1 (1838), 3.
[27] For Petty's biography, see Chapter Two footnote 42.
[28] 'Introduction', 3.
[29] Thomas Carlyle was an influential author in nineteenth-century Britain. For his *ODNB* entry, Kaplan, Fred. 2008 'Carlyle, Thomas (1795–1881), author, biographer, and historian.' *Oxford Dictionary of National Biography*. 22 Oct. 2018.
[30] William Augustus Guy, 'Thomas Carlyle and John Howard', *Fraser's Magazine* 41:244 (1850): 406–10. For Carlyle's original text, see Thomas Carlyle 'Model Prisons' in *Latter-Day Pamphlets* (London: Chapman and Hall, 1850), 41–73.
[31] Ibid, 185.
[32] Guy, 'On the Claims of Science to Public Recognition and Support', 436.
[33] William A. Guy, 'John Howard as Statist', *Journal of the Statistical Society of London* 36:1 (1873): 1–18.
[34] William A. Guy, 'Inaugural Address Delivered at the Society's Rooms, 12, St. James's Square, London, on Tuesday, 18th November, 1873', *Journal of the Statistical Society of London* 36:4 (1873): 467–85.

published a paper, 'John Howard's True Place in History', to clarify the implication of his previous paper published two years earlier.[35]

In addition to his writing, Guy campaigned to register Howard's name in the history of the SSL and statistics. In 1873, Guy proposed at the SSL Executive Committee the creation of the Howard Medal to be awarded for an excellent essay on social statistics, which was approved by the SSL Council.[36] Guy attributed the idea for the Howard Medal to SSL member Hyde Clarke.[37] As no essay was submitted in 1874, the first Howard Medal was awarded in 1875. The Howard Medal was then awarded every year, except 1877, until 1884. The award was resumed in 1893 but again ceased to be awarded after 1910.[38]

Guy further advanced official commemoration of Howard as one of the SSL's founders. The death of Adolph Quetelet,[39] the most influential statistician of his age, in 1874 prompted the SSL Council to propose the commission of a portrait in Quetelet's honour, as he was also instrumental in the creation of the SSL and was the society's first foreign member.[40] The SSL created the Quetelet Fund to cover the expense of his portrait. Although the fund was named after Quetelet, the arrangement was further expanded to 'collect portraits of the Founders of the Society, and of other eminent persons connected with Statistical research'.[41] James Heywood[42] and William Newmarch[43] offered £5 to

[35] William A. Guy, 'John Howard's True Place in History. A Supplement to the Paper Entitled "John Howard as Statist."', *Journal of the Statistical Society of London* 38:4 (1875): 430–37.
[36] 'B2/3 Council Minutes, Jan 1873–Dec 1889' London, Royal Statistical Society Archive, 45–47 (11 Dec. 1873). Also, see 'Report of the Council for the Financial Year Ended 31st December, 1873, and for the Sessional Year Ended 30th June, 1874, Presented at the Fortieth Anniversary Meeting of the Statistical Society, Held at the Society's Rooms, 12, St. James's Square, on the 30th of June, 1874, with the Proceedings of That Meeting', *Journal of the Statistical Society of London* 37:3 (1874), 308. For Galton's biography, see Chapter Two footnote 1.
[37] Guy, '1873 SSL Inaugural Address', 485. For Hyde Clarke, there is no entry in *ODNB*.
[38] Apparently, it was again revived in 1929, but no award was made. See, 'Current Notes', *Journal of the Royal Statistical Society* 92:1 (1929), 139.
[39] For Quetelet's biography, see Introduction footnote 57.
[40] 'Report of the Council for the Financial Year Ended 31st December, 1874, and for The Sessional Year Ended 29th June, 1875, Presented at the Forty-First Anniversary Meeting of The Statistical Society, Held at the Society's Rooms, Somerset House Terrace (King's College Entrance), Strand, W.C., London, on the 29th of June, 1875, With the Proceedings of That Meeting', *Journal of the Statistical Society of London* 38:3 (1875), 313. Royal Statistical Society, *Annals of the Royal Statistical Society, 1834-1934* (London: Royal Statistical Society, 1934), 13.
[41] '1875 SSL Council Report, 313.
[42] For Heywood's biography, see Chapter Two footnote 97.
[43] For Newmarch's biography, see Introduction footnote 88.

cover the cost of a portrait of Quetelet, Prince Albert, and Thomas Tooke.[44] Guy, then president of the SSL, contributed £5 for a portrait of John Howard as well as Florence Nightingale.[45]

Guy's efforts to commemorate Howard have drawn little attention from historians. Roy Porter is one of the few historians to discuss Guy's peculiar attachment to Howard and has pointed out his strategic use of Howard's reputation. Porter concludes that Guy took advantage of Howard's fame to give authority to the sanitary movement in which Guy was deeply involved.[46] While Porter is correct that Guy's narrative mythologised Howard's life to gain public support for what he personally believed in, Porter fails to consider the more extensive scope of Guy's activities and the complexity of his narrative. I argue that what was at stake in Guy's attempt was larger than Porter suggests. As I will demonstrate in the next section, Guy's narrative of Howard's achievements was an attempt to present a model of the social scientist rather than to simply boost a specific social reform, such as the sanitary movement.

3. Moulding Statisticians and Their Scientific Ethos

3-1. Data Collection as a Tool for Social Reform

Guy's extolling narrative of Howard employed a strategy denouncing the prevalence of 'misconceptions' about Howard that, according to Guy, should be corrected. In his papers and speech published in the *JSSL*, Guy further insisted that statisticians and the SSL suffered from the same type of misunderstanding that Howard did.[47] As the title of his 1875 paper, 'John Howard's True Place in History', suggests, Guy's narrative was

[44] '1875 SSL Council Report', 313.
[45] Ibid, 313. Florence Nightingale was an illustrious sanitary reformer. She joined the SSL as the first female member in 1858 and maintained her membership until her death, although she was not an active member. For Nightingale's *ODNB* entry, see Baly, Monica E., and H. C. G. Matthew. 2011 'Nightingale, Florence (1820–1910), reformer of Army Medical Services and of nursing organization.' *Oxford Dictionary of National Biography*. [accessed on 22 Oct. 2018]
[46] Roy Porter, 'Howard's Beginning: Prison, Disease, Hygiene', in *The Health of Prisoners: Historical Essays*, ed. Richard Creese and Richard Creese William F. Bynum J. Bearn (Rodopi, 1995), 6, 17 n.7.
[47] Guy, 'John Howard as Statist', 1. For the sanitary reform, see John M. Eyler, *Victorian Social Medicine: The Ideas and Methods of William Farr* (Baltimore ; London: Johns Hopkins University Press, 1979). Simon Szreter, 'The GRO and the Public Health Movement in Britain, 1837–1914', *Social History of Medicine* 4:3 (1991): 435–63; Simon Szreter, *Health and Wealth: Studies in History and Policy*, Rochester Studies in Medical History (Rochester, NY: University of Rochester Press, 2005).

organised to replace the prevailing 'unjust' view with what he saw as the 'true' image of Howard, which, accordingly, was to provide the 'true' representation of the statistician.[48]

The first 'misunderstanding' that Guy aimed to correct was the reduction of Howard's achievements to the mere collection of facts. Carlyle and others, Guy argued, only looked at 'the patient and toilsome way in which Howard collected facts' and failed to understand the place that data-gathering occupied in Howard's systematic procedures for uncovering and solving social problems.[49] In fact, Guy continued, Howard's novelty and originality lay in his invention of the 'method of procedure', which provided a model for the SSL and the state to follow.[50]

Guy portrayed Howard's system of social improvement as consisting of three stages: inquiring into an issue, reporting to the authority, and obtaining eventual redress. Guy argued that, while Howard's system was most fully exemplified by his famous prison inquiry starting in 1773, its prototype could be found as early as 1756 when he helped liberate British prisoners of war from French prisons.[51] Howard was captured by a French privateer on his return from a visit to earthquake-stricken Lisbon and kept in a jail as a prisoner of war, where he witnessed the suffering of a large number of British sailors who shared his misfortune.[52] After being released from the prison in 1756, he painstakingly collected information regarding the mistreatment of British prisoners of war in France.[53] He presented evidence to the Commissioners of Sick and Wounded Seamen in England, and according to Guy, Howard's efforts resulted in the release of British captives from cruel French prisons.[54] Interestingly, Guy branded Howard's inquiry-based humanitarian work as statistical and claimed it was Howard's 'first contribution to statistics, his earliest claim to the name of statist'.[55]

Guy also praised Howard's prison inspection in 1773–1774 as a 'truly statistical inquiry', which, according to Guy, followed the same cycle of inquiry, report, and redress as his

[48] Guy, 'John Howard's True Place in History'.
[49] Guy, 'John Howard as Statist', 1.
[50] Ibid, 1–2. Guy, 'John Howard's True Place in History', 431–432.
[51] Guy, 'John Howard as Statist', 8–9. Guy, 'John Howard's True Place in History', 431.
[52] William A. Guy, *1773, or, John Howard, Sheriff of Bedford* (London: Henry Renshaw, 1873), 9–10.
[53] Guy, 'John Howard as Statist', 9. Guy, 'John Howard's True Place in History', 431.
[54] Guy, 'John Howard as Statist', 9. Guy, 'John Howard's True Place in History', 431.
[55] Guy, 'John Howard as Statist', 9.

work in 1756.[56] As soon as Howard was appointed the high sheriff of Bedfordshire in 1773, he carried out one of his duties and visited local prisons, where he witnessed cruel abuses of prisoners.[57] He extended his inquiry to all of England and learned that the problems he found in Bedfordshire were prevalent across the country.[58] Howard found two major problems. The first was the detention of innocent people even after their non-guilty verdicts because they could not afford to pay the fees demanded by the prison staff.[59] The second was that mismanagement of jails allowed jail fever and small pox to severely damage prisoners' and jailers' health alike. Howard collected evidence of the deplorable states of English prisons and presented it before the House of Commons, which, in response to Howard's report, passed two acts: one abolishing illegal extortion charged by jailors and the other introducing measures to preserve the health of prisoners.[60]

Howard's procedures were further developed after 1774, Guy suggested, and what started as one-off efforts became repeated cycles of inspection. While the two legislative acts that Howard helped pass were supposed to end all the problems in English prisons, he suspected that those new laws would not be properly observed.[61] He sent copies of the new acts and made them known to every prison in England and Wales.[62] He then started a new round of inspections and soon discovered that the new orders were ignored at most of the prisons and the previously reported problems persisted.[63] Howard again published his observations of the conditions of the prisons in England and Wales to keep the public informed on the progress of improvements, or lack thereof, so that the issue would not sink into oblivion. Howard repeated prison inspections and recorded changes in their conditions until his death in 1790.[64] By such 'successive processes', Guy summarised, 'great social evils and wrongs' were 'first exposed, then prohibited, then watched, checked, and destroyed'.[65]

[56] Ibid, 10.
[57] Ibid, 10.
[58] Ibid, 10.
[59] Ibid, 10.
[60] Ibid, 10.
[61] Guy, 'John Howard's True Place in History', 434.
[62] Ibid, 434.
[63] Ibid, 434.
[64] Guy, 'John Howard as Statist', 13.
[65] Guy, 'John Howard's True Place in History', 435.

Guy opposed the 'misconception' of Howard as a mere data-gatherer by presenting him as the inventor of the 'modern method of dealing with social wrongs', which, Guy claimed, did not contradict Howard being 'a Statist in the truest and best sense of the term'.[66] This does not mean that Guy appreciated any less the importance of the data in Howard's works or in statistics in general. Guy included in the ranks of statisticians those who would leave 'their facts in the rough, as materials for others to make use of', a phrase resembling the SSL's original Latin motto, *aliis exterendum* .[67] Guy also cited Howard's hope that the data he collected would be preserved and used by future generations 'to *alleviate* the *miseries* of mankind, and add something to the general stock of *happiness* among the human race' even after he was 'dead and forgotten', which resonated with the idea behind the creation of the *JSSL*.[68] What Guy was trying to achieve was expanding the domain of statisticians to become a dynamic process in which data collection was to be followed by the publication of reports and subsequent monitoring, based on which the state could eliminate the root causes of social problems.

3-2. Impetuous Philanthropists and Prudent Statisticians

The first misconception about Howard led to the second, which was failing to see his scientific qualities. Victorians, including Carlyle, remembered Howard as a philanthropist for his efforts for social amelioration.[69] Guy described Howard as a statistician, or a 'statist', in Guy's terminology, whose ultimate mission was to resolve social problems, which may not appear to be very different from the repeated image of Howard the philanthropist, as both statisticians and philanthropists aimed to ease people's suffering. However, Guy cautiously differentiated Howard the statistician from conventional philanthropists.

While statisticians and philanthropists shared a similar goal, both groups could be distinguished, according to Guy, on the basis of their intellectual abilities to grasp the root cause of social problems and propose effective solutions accordingly. Along this

[66] Ibid, 436.
[67] Guy, 'John Howard as Statist', 2–3.
[68] Ibid, 4. Emphasis in original.
[69] William Augustus Guy, 'Essays on "Paternal Government" and "Government by Inquiry and Inspection''"', in *The Original*, ed. William Augustus Guy and Thomas Walker (London, 1875), 147.

divisional line, Guy distinguished 'preventive philanthropy', which Howard represented, from conventional 'palliative philanthropy'.[70] Guy asserted that statisticians who would follow Howard's system of statistical inquiry could discover and eliminate the root cause of social problems while benevolent philanthropists could only alleviate the symptoms of social problems that appeared on the individual level.[71] In other words, statisticians were considered more capable than philanthropists of both understanding and solving social problems.

Guy's claims regarding Howard's invention of systematic social reform and his intellectual superiority to conventional philanthropists appear to be a typical strategic move for a new group of experts to assert their intellectual superiority over the establishment with the aim of gaining better social footing, which historians have already pointed out.[72] It should be noted, however, that Guy's portrait of Howard's incessant endeavours to acquire a deeper understanding of the world also emphasised his strangely ascetic quality.

Howard was described as being capable of overcoming the temptation of exaggeration. Guy expected statisticians to share 'with all men of science a love of truth for its own sake, coupled with a supreme indifference' towards whether the results of their inquiry would 'disappoint' their expectations or prove 'repulsive'.[73] To demonstrate such qualities in Howard, Guy cited Howard's *State of Prisons* and his estimation of the negative social impact that the flawed prison system was producing.[74] Howard found 4,084 prisoners held in prisons across the country in the spring of 1776 and combined this with the estimated number of dependants that those prisoners had. He determined that the total number of people affected by imprisonment should be 12,252.[75] With this estimation, Howard maintained that preceding assessments were 'greatly magnified by conjectural computations'.[76] His conservative estimate could have weakened 'the force of his appeal'

[70] Guy, 'John Howard's True Place in History', 437.
[71] Ibid, 437.
[72] Goldman, 'Experts, Investigators, and the State in 1860: British Social Scientists through American Eyes'. Libby Schweber, *Disciplining Statistics: Demography and Vital Statistics in France and England, 1830-1885*, Politics, History, and Culture (Durham, NC; London: Duke University Press, 2006), 124–126. Yeo, *The Contest for Social Science*, Ch. 4.
[73] Guy, 'John Howard as Statist', 2.
[74] Ibid, 3.
[75] Ibid, 3.
[76] Cited in Ibid, 3.

for the need for reform. Nonetheless, he was, Guy observed, 'pleased to substitute this census for the guesses of others', as his estimation was supposedly more accurate.[77] Guy suggested that Howard also withstood the temptation of physical comfort in his pursuit of knowledge.[78] Guy mentioned Howard's interest in meteorological observation, which served as evidence of Howard's familiarity with scientific observation, and told an anecdote of Howard's sacrifice of pleasure for science. Howard left the bed at 2:00 a.m. on the first day of frost in order to record the temperature in his garden, which was some distance from his house.[79] Guy's emphasis on Howard's repeated visits to unsanitary prisons could also be seen as evidence of Howard's sacrifice of his comfortable life, which he could have had at his estate in Cardington.

Those types of self-discipline were common among men of science, as the production of knowledge often involved the active and passive regulation of one's body and mind.[80] What makes Guy's narrative particularly interesting in the history of science is descriptions of self-control that were unique to social scientists and that correspond to unique temptations in social sciences. As statisticians' missions included developing practical solutions for the suffering of actual people, statisticians were compelled to swiftly alleviate people's distress. This sense of urgency, however, produced two types of temptation.

One was impetuous reactions towards pressing cases of human misery that would tempt statisticians to indulge in nearsighted merely palliative measures, such as philanthropists' almsgiving. To counter such temptation, statisticians were encouraged to wonder what caused suffering, as causal knowledge was a powerful resource to solve the issues. By doing so, Guy expanded the role of the SSL, as the early SSL was wary of what it saw as speculative inquiry.[81] As Guy saw it, the society's initial self-confinement to strictly factual reports should be attributed to the peculiar political situations in which the establishment of the SSL was embedded.[82] Since the Reform Bill of 1832 passed just two

[77] Ibid, 3.
[78] Ibid, 7–8.
[79] Guy, *1773, or, John Howard, Sheriff of Bedford*, 10.
[80] For scientists' self-denial, see Lorraine Daston and Peter Galison, *Objectivity* (New York :London: Zone Books, 2007), 228–233. For observers' sacrifice of social obligation, see Lorraine Daston, 'The Empire of Observation, 1600-1800', in *Histories of Scientific Observation*, ed. Lorraine Daston and Elizabeth Lunbeck (Chicago, IL: University of Chicago Press, 2011), 103.
[81] Guy, '1873 SSL Inaugural Address', 471.
[82] Ibid, 471.

years prior to the society's formation, 'party spirit sill ran very high', Guy observed, and this forced the SSL to narrowly focus on the collection of facts so that the society could avoid 'the taint of party'.[83] However, the SSL's policy was not sustainable, he asserted, as collected facts posed questions regarding causality, for example, '[H]ow was it that they came to be facts at all? How did they come to be what they were?'[84] In fact, Guy further claimed that the SSL could not achieve its goal 'to throw light on the "condition and prospects of society"' without some level of 'opinion'.[85] After all, social 'condition was a matter of fact: but its prospects a matter of uncertainty—necessarily an inference from the past, necessarily a speculation as to the future'.[86] Facing the scene of 'poverty, destitution, and crime' that prevailed among 'the lower stratum of our artificial society', it would be impossible, Guy insisted, for those who possessed 'sense, curiosity, or fancy' to remain 'unmoved'. [87] One would have to wonder what caused such a plight and whether 'personal defects' on the part of the poor, 'slovenly habits, of dole-giving in the rich and less poor', or 'inaptitude in the State' should be blamed.[88]

An appetite for causal knowledge of social problems posed another temptation: drawing premature conclusions. Anyone interested in solving social problems immediately would be tempted to hastily jump to apparently plausible but delusional views without painstaking verification of their validity. Guy lamented how 'the poet and painter' easily fell for the convenient theory of class divide between 'the rich, mostly oppressors' and 'the poor mostly oppressed', which, Guy insisted, was 'so remote from the sober truth of things'.[89] He even hinted that premature theorisation could prolong the people's suffering, as it would misguide efforts to solve the issue.[90] A large-scale data set was supposed to provide a safeguard for hasty policy making. Statisticians were expected to replace 'the convenient simple language of poetry' with 'the more exact, though more perplexing, language of figures' that would show the complexity of society in its entirety.[91] Guy urged the SSL, as the representative body of social science, to pursue 'laborious truth' and not to be tempted to indulge in 'easy speculation'.[92] Outside the narrow scientific circle of

[83] Ibid, 471.
[84] Ibid, 471.
[85] Ibid, 471.
[86] Ibid, 471.
[87] Ibid, 472.
[88] Ibid, 472.
[89] Ibid, 472. The lack of comma after 'the poor' is truthful to the original text.
[90] Ibid, 472.
[91] Ibid, 472–473.
[92] Ibid, 482.

statisticians, he conceded, 'there would still be room enough for all honest workers anxious to promote social reforms on the basis of obvious wrong-doing, without waiting to ascertain in how many instances the wrong in question is being committed'.[93] He imagined that, on some occasions, the necessity of reform could be argued based on 'one or two apparently typical cases'.[94] However, there is an 'immense advantage', he insisted, to presenting the social issue 'not in a single example only, or even in one or two instances, but in its whole extent and magnitude'.[95] It would be 'a most important function of statistics', Guy continued, to provide the complete extent of 'some existing evil' to the general public.[96] He was aware that such patience and thoroughness would not be a natural attitude for most, as a vivid example of a single traffic accident, shipwreck, train crash, or violent incident would leave a stronger impression on the majority's mind than mere figures on paper, even though those numbers represented many cases of similar tragedies. [97] However, Guy claimed, there would be 'a minority, comprising a very large proportion of active reforming spirits', who would have the ability to understand the magnitude of what those figures represent and would be urged to help legislate preventive policies.[98] Once touched with 'the realising faculty which statists share with other men of science', those apparently dry numbers would become 'instinct with life' and produce the same sort of effect that 'a great novelist or poet' would 'produce on the mind of the public'.[99]

Guy's narrative interwove the epistemic and moral spheres. He implied that statisticians' perpetual resistance against the temptation to act quickly would eventually lead them to see the true cause of social problems and to develop effective solutions, while those who lacked such self-control would succumb to temptations and end up with superficial views on the problem at hand, which would practically obstruct the course of justice. While praise for slow painstaking investigation was common among men of science after the mid-nineteenth century,[100] the slow work pace required stronger justification in social sciences whose duty included dealing with urgent situations of human suffering.

[93] Ibid, 482.
[94] Ibid, 482.
[95] Ibid, 483.
[96] Ibid, 483.
[97] Ibid, 483.
[98] Ibid, 483.
[99] Ibid, 483.
[100] Daston and Galison, *Objectivity*, 229–231.

Howard's life was taken as an example to illustrate the intersection of statisticians' moral and intellectual strengths. Guy differentiated Howard from overly emotional philanthropists, who were, as Carlyle claimed, driven by 'morbid sympathy' for 'scoundrels' and participated in 'Benevolent-Platform Fever', whose origin, Guy insisted, Carlyle wrongly attributed to Howard.[101] While other philanthropists were content with 'the ever-beginning, ever-recurring work of palliation', Howard laid 'the secure foundations of that grand Policy of Prevention' which would cure the root cause of those problems.[102] Howard's sympathy was properly channelled to undertake a painstaking statistical inquiry. His calmness in the face of human misery should not be mistaken as coldness, Guy insisted, as Howard was 'redeemed from all that is cold and harsh by the bright warm rays of humanity and patriotism'.[103] In fact, Howard displayed an unrivalled level of 'practical sympathy', Guy wrote, towards 'every variety of human suffering'.[104] Howard did not let himself drown in his emotions, as they were 'sobered down by the most minute and laborious attention to fact'.[105] Howard's life demonstrated the power of 'collecting all the facts within our reach', and Guy praised Howard as 'a great Statist' as well as a great philanthropist.[106]

3-3. Note-Taking and the Escape from Immediate Impressions

Guy's biographical sketches of Howard epitomised statisticians' intellectual and moral obligations through his practices of comprehensive data collection. Guy's favourite tale of Howard's winter journey to perform prison inspections in 1773–1774 and Howard's diligent note-taking during the journey vividly described the embodiment of statisticians' peculiar way of seeing.

[101] Guy, 'Essays on "Paternal Government" and "Government by Inquiry and Inspection'"', 147. Guy, 'Thomas Carlyle and John Howard'.
[102] Guy, '1873 SSL Inaugural Address', 485
[103] Guy, 'John Howard as Statist', 11.
[104] Guy, 'John Howard's True Place in History', 437.
[105] Guy, 'John Howard as Statist', 11.
[106] Guy, '1873 SSL Inaugural Address', 483.

As I mentioned earlier, Howard's winter journey led him to uncover two major issues that prevailed among English prisons.[107] One was the illegal fees that jailers customarily charged inmates, and the other was rampant jail fever that damaged prisoners' health.[108] Guy pointed out an interesting time lag between the instant discovery of the former issue and the gradual recognition of the latter.[109]

Regarding the issue of illegal fees, Howard immediately grasped its cause, effect, and solution. As a newly appointed sheriff of Bedfordshire in 1773, he carried out his obligation of inspecting the county jail, the town jail, and the county bridewell in his region.[110] Howard was shocked to find the unjust detention of people who were declared innocent. They could not leave the prisons, as they could not afford the fees imposed by jailers.[111] '[W]ith that quick and just perception of cause and effect, of wrong and remedy', Guy wrote, Howard saw that the jailors' apparently unreasonable behaviours derived from their financial insecurity, as those fees were their main source of income. Howard saw 'at a glance that the cure of this evil' was the introduction of a fixed salary in lieu of those fees.[112]

Howard's journey taught him the true extent of the problem he witnessed. While Howard reported the conditions of local prisons and conveyed his proposed solution to the justice of the peace, he was told that the proposed reform could not be instituted without a precedent.[113] This prompted Howard to further visit the jails in the midland counties, and he then even travelled to London for inspections.[114] As he could not find any precedent, he ended up travelling all over the country and visited most of the jails in England.[115] To his surprise, a series of inspections revealed that what he found in Bedford, in fact, prevailed throughout the country.[116]

[107] Guy, 'John Howard as Statist', 10. Guy, 'John Howard's True Place in History', 433.
[108] Guy, 'John Howard as Statist', 10. Guy, 'John Howard's True Place in History', 433.
[109] Guy, 'John Howard's True Place in History', 432.
[110] Guy, 'John Howard as Statist', 10. Guy, 'John Howard's True Place in History', 432.
[111] Guy, 'John Howard as Statist', 10. Guy, 'John Howard's True Place in History', 432.
[112] Guy, 'John Howard's True Place in History', 432.
[113] Guy, 'John Howard as Statist', 10. Guy, 'John Howard's True Place in History', 432.
[114] Guy, 'John Howard's True Place in History', 433.
[115] Guy, 'John Howard as Statist', 10. Guy, 'John Howard's True Place in History', 433.
[116] Guy, 'John Howard as Statist', 10. Guy, 'John Howard's True Place in History', 433.

Howard's long winter journey also opened his eyes to what his first glance failed to see. The more he collected data, the 'better and better' he became 'acquainted with the manifold evils, physical and moral'.[117] During his journey to inspect the county jails, he noticed that the most-wretched inmates he observed were brought from the bridewells.[118] Following this lead, Howard expanded the scope of his inquiry and finally came to fully recognise the damage that jail fever caused prisoners.[119]

Guy attributed Howard's eventual success to his patient undertaking of comprehensive fact-gathering, which made him 'perfect master of all the facts of the case' and 'cognizant of all the physical and moral elements which went to make up the grand total of personal injustice and national peril'.[120] It should be noted that, while Guy did praise Howard's 'penetrating glance' that uncovered the prevalence of jail fever across prisons, Guy's narrative suggested Howard's acuity was unexceptional and that some of the prison investigators who preceded him had perceptual abilities as acute as his. Guy admitted some had found the issue and even solutions for the illegal fees before Howard.[121] In 1701, the Society for Promoting Christian Knowledge (SPCK) sent a committee chaired by Thomas Bray[122] to examine the state of Newgate, Marshalsea, and other prisons.[123] While Bray found abuses in those prisons and proposed the remedy in his essay, it was buried in the SPCK's archives and was not published until 150 years later.[124] In 1729, a parliamentary committee chaired by James Oglethorpe[125] exposed cruel practices by jailers, but it failed to implement any reform.[126] In 1773, Alexander Popham[127] revived the Oglethorpe committee's findings regarding jailors' conduct and proposed a

[117] Guy, 'John Howard's True Place in History', 434.
[118] Guy, 'John Howard as Statist', 10.
[119] Ibid. p. 10. Guy, 'John Howard's True Place in History', 433–434.
[120] Guy, '1873 SSL Inaugural Address', 484. Guy, 'John Howard's True Place in History', 436.
[121] Guy, 'John Howard's True Place in History', 435–436.
[122] Thomas Bray was a clergyman and the founder of the SPCK. For Bray's *ODNB* entry, see Cowie, Leonard W. 2012 'Bray, Thomas (bap. 1658, d. 1730), Church of England clergyman.' *Oxford Dictionary of National Biography.* [accessed on 22 Oct. 2018]
[123] Guy, 'John Howard's True Place in History', 435.
[124] Ibid, 435. Bray's essay was apparently titled 'Essay towards the Reformation of Newgate, and the other Prisons in and about London'.
[125] James Oglethorpe was a member of parliament and a social reformer. Wood, Betty. 2006 'Oglethorpe, James Edward (1696–1785), army officer and founder of the colony of Georgia.' *Oxford Dictionary of National Biography.* [accessed on 22 Oct. 2018]
[126] Guy, 'John Howard's True Place in History', 436.
[127] Alexander Popham was a politician. He was actively engaged in prison reform. In 1774, Popham brought a bill to alleviate the prevalence of jail fever based on Howard's recommendation. For Popham's *ODNB* entry, see Seccombe, Thomas. 2004 'Popham, Alexander (1729–1810), politician and penal reformer.' *Oxford Dictionary of National Biography*. 22 Oct. 2018.

parliamentary bill to replace jailors' fees with a fixed salary, the same solution that Howard would later promote, although Popham eventually had to give up his bill.[128] Guy imagined that Howard knew about Popham's bill and that Howard's 'attention was naturally directed in the first instance to the evil wrought by this false system of payment' when he started his prison inspections.[129] Although Popham and his predecessor, Oglethorpe, apparently had reasonably good observational abilities, they could not achieve what Howard did because, Guy suggested, only Howard had the patience with the necessarily slow collection of all the relevant facts, which allowed him to appreciate the problem in its entirety and to persuade others of the need for reform.

Guy suggested that Howard's note-taking played a vital role in his method of comprehensive data collection. It allowed comparison of spatial and temporal variations in the state of prisons and disclosed common denominators behind apparently locally contingent abuses.[130] Guy's 1873 paper illustrated Howard's system of writing by directly quoting Howard's observation of the Warwick Gaol from his *The State of Prisons*.[131] Guy pointed out that Howard divided his observation into three parts. The first part recorded basic information for each prison, such as the date of his visit, the number of prisoners, the name and salaries of prison staff, and the custom of fees charged to inmates.[132] The second part provided minute descriptions of the prison, such as the size of rooms, diet, and sanitary conditions, based on information he collected through observation and inquiry.[133] The last part included copies of some documents he found during his inspection, such as 'tables of fees and orders of the justices'.[134] Howard's first part, Guy claimed, was arranged as a 'tabular systematic statement', which recorded the same types of information for each prison in an orderly way and allowed an 'easy comparison' to be made among the prisons.[135] Howard began to visit prisons outside Bedfordshire in the hope of finding a precedent to solve an abuse he saw in his local prisons. In the course of his journey, however, he found that his notebook became filled with 'plain and truthful

[128] Guy, 'John Howard's True Place in History', 436.
[129] Guy insisted in 1873 Howard was the first person to propose this solution, but conceded in 1875 that Popham's proposal came first. Guy, '1873 SSL Inaugural Address'. p. 484. Guy, 'John Howard's True Place in History', 436.
[130] Guy, 'John Howard as Statist', 13.
[131] Ibid, 13.
[132] Ibid, 13.
[133] Ibid. 13.
[134] Ibid, 13.
[135] Ibid, 13.

records of universal abuses' across the country.[136] The excerpt showed Howard's multiple visits to the Warwick Gaol from 1773 to 1788 and recorded changes that occurred over time.[137]

Guy indicated that Howard's patient note-taking, as well as his journey, were techniques that enabled him to distance himself from the on-the-spot impressions he gained from observation, which otherwise could mislead him to make nearsighted and/or superficial conclusions. Instead of trusting his immediate impressions, Howard patiently undertook a journey of inspections and methodically recorded facts in his notebook. With these techniques, Howard could collect all the facts, as opposed to a handful of potentially exceptional cases, and see what nearsighted observers could not see. '[H]ad Howard rested content with one or two facts' of abuses in prisons, Guy told the SSL fellows, 'he would certainly have failed' to grasp systematic problems in British prisons, and hence, there would be no comprehensive prison reform, as '[i]t was the completeness of his inquiry, and the consequent number of his facts that carried the day'.[138]

It should be noted that Guy's implicit assumption that a few cases of observation could not produce genuine causal knowledge about social problems or suggest effective reform was not a logical imperative. In fact, as I discussed earlier, Guy himself conceded that conventional philanthropists might contribute to social reforms without having all the facts when they saw obvious wrongdoings.[139] Dickens' caricature of blind statisticians, which I cited at the beginning of this chapter, apparently presupposed the possibility of instantaneous comprehension of social problems. From this perspective, statisticians who do not immediately accept obvious wrongs would appear, as they did to Dickens, heartless and incompetent.

Guy's narrative, however, was carefully crafted to support his assumption using anecdotal evidence of Howard's winter journey, in which the true extent of abuses in prisons was revealed only after the slow and patient process of data collection. When such an assumption was accepted, what appeared to Dickens as statisticians' heartless indifference to human suffering should then be seen as a product of statisticians' strong

[136] Guy, 'John Howard's True Place in History', 433–434.
[137] Guy, 'John Howard as Statist', 13
[138] Guy, '1873 SSL Inaugural Address', 484.
[139] Ibid, 482.

moral principles. Impatient social reformers would prematurely identify ‘obvious’ causes after cursory observation of a few cases and propose superficial solutions that would not lead to any actual resolution. Facing disturbing social problems, statisticians would also be tempted to carry out hasty reform based on scant evidence. Resisting such temptation would require statisticians to have the courage to be faithful to their scientific belief that patient comprehensive data collection would lead them to better solutions than impulsive actions. Guy’s narrative of Howard suggests that waiting for the inevitably slow process of data accumulation was not only a more effective way of producing knowledge but was also a moral imperative. Statisticians learned to question their immediate impressions, as they feared what they saw could be an exceptional case and mislead them, drawing them away from the best solution. It was their reservations and even distrust in their own perceptions that enabled them to see what the naked eye would fail to see.

Guy’s narrative suggests that Howard’s tireless travel and note-taking were practices that embodied statisticians’ moral principles, as both techniques were to save Howard from being fooled by the imperfect and misleading impressions he had on the spot. Howard visited prisons himself and breathed the same foul air that prisoners had to breath, but Guy did not give much credit to Howard’s first-hand experience and intuitions. Howard methodically transferred his observations into his notebook in a way that the accumulated cases could be compared with each other. With the help of his notebook, Howard could go beyond his instantaneous understanding of the issue of illegal fees and discover the prevalence of jail fever, which was not obvious to him at first glance. Guy’s tale presents the lesson that statisticians should have reservations about even apparently obvious conclusions until the data are available to them in their entirety because this is the only way, Guy’s narrative suggests, to see through the true causes behind apparently self-evident social problems and truly save the people who are suffering.

4. Conclusion

Statisticians represented themselves as a new type of intellectual inquirer with a new type of expertise, but they also created themselves as a new type of moral agent who disciplined their own mind and body to produce scientific knowledge about human beings in society. When British statisticians became increasingly vocal in their demand for recognition of their expertise and competence in the mid-nineteenth century, they were aware of lingering suspicion towards statisticians’ intellectual and moral integrity.

Statisticians' claim of expertise rested on their mastery of reading and making sense of an array of numbers. The use of numbers, however, did not automatically establish statisticians' credentials, as they could be seen, Victorian statisticians feared, as frauds committing hocus-pocus. The complexity of their work could tempt them to abuse statistical data to support whatever political beliefs they had, as the perplexing appearance of numbers would deter most from verifying the conclusion drawn from the data. Statisticians were conceived as able to remain faithful to data while being constantly exposed to the temptation of suppressing unfavourable data.

Dickens' grossly exaggerated caricature attacked statisticians' peculiar way of seeing and their apparent incompetence. His character Thomas Gradgrind was strangely blind to the actual suffering that was unfolding before his eyes. Although it would just take a quick glance and a little compassion and imagination to see the wrongs that prevail in his town, Gradgrind confines himself in a room isolated from the real lives of people where he is glued to lifeless numbers on paper, and he apparently believes that he can understand and even save people in misery just by playing with numbers.

Guy's efforts to honour John Howard as the founding father of statistics and the SSL in the early 1870s should be seen in the context of Victorian statisticians' attempt to clear the suspicion cast on them and to defend their way of seeing.

Guy's narrative presented Howard as an exemplar whose virtues all statisticians should aspire to acquire. More than anyone else, Howard displayed sympathy towards people in distress, and as a true statistician, he worked to discover practical solutions based on scientific knowledge. Howard was more than just a man with expert knowledge; he was ready to sacrifice physical comfort for the pursuit of knowledge and forsake his personal beliefs when observational results contradicted them. In addition to those traits that were common among men of science, Guy depicted Howard as being full of virtues that were unique to statisticians as empirical social scientists.

In the face of social misery that required urgent intervention, statisticians would be tempted to indulge in carrying out the immediate but nearsighted act of palliation. Although Gradgrind in Dickens' novel tells his daughter 'never wonder', statisticians had to wonder why deplorable social conditions persisted, because knowing the cause of the problem was the key to solving it.[140] Misguided sympathy also would tempt statisticians

[140] Dickens, *Hard Times*, 52.

to prematurely draw a superficial conclusion after cursory observations, which would end up distracting philanthropists from the real solutions to the problems. Against those temptations, Howard patiently undertook an exhaustive inquiry, which enabled him to discover the causes of social problems and develop effective solutions. Guy's tale of Howard demonstrated not only the efficacy of collecting all relevant facts but also his courage not to be distracted by misleading impressions and to pursue such a necessarily slow path of truth.

Having a quick glance may have sufficed for Dickens to penetrate the social reality. For those who would readily swallow the apparently 'obvious' causes, statisticians' habitual reservations towards instantaneous understanding might appear to be evidence of their incompetence and even moral deficits. However, for statisticians, trusting one's eyes would seem to be the vice of arrogance. Statisticians would unlearn how to see things as it appeared to them. They were urged to turn their eyes away from the street to statistical tables on paper because that was where they would see what the naked eye could not see. Dry figures on paper might have blinded statisticians to individual cases of misery, but it opened their eyes to people's suffering in its entirety.

This chapter has demonstrated how Guy developed an ethos that legitimised statisticians' way of seeing even though it could be seen as unintuitive outside the community of statisticians. Statisticians created a social scientific ethos where ways of knowing and being are inseparably intertwined, and they moulded themselves as scientific and moral beings. After embracing such an ethos, statisticians could synthesis warm sympathy and calm scientific inquiries.

It must be emphasised, however, that, despite statisticians' insistent claims of their scientific expertise since the mid-nineteenth century, they have never replaced philanthropy or fully conquered social scientific discussion. Moreover, at the end of the nineteenth century, the statistical ethos faced a new challenge from what we today would call the qualitative type of social science. In the same period that Guy was trying to establish social scientific discipline and ethos, observational practices known as social exploration were on the rise.[141] Social explorers were primarily concerned with social

[141] P. J. Keating, ed., *Into Unknown England, 1866-1913: Selections from the Social Explorers* (Manchester: Manchester University Press, 1976); Mark Freeman and Gillian Nelson, eds., *Vicarious Vagrants: Incognito Social Explorers and the Homeless in England, 1860-1910* (Lambertville, NJ: True Bill Press, 2008); Gillian Nelson, 'A Century of Covert Ethnography in Britain, c.1880–c.1980' (University of Glasgow, 2010).

problems, in particular, the life of the poor living in slums. Social explorers apparently discovered that people's actual experiences were a new source of knowledge and, accordingly, invented a new mode of social investigation. It captured the imagination of late Victorian Britain. Whether prompted by mere curiosity or genuine altruism, the middle classes were drawn to the 'foreign' land of poverty-stricken East London.[142] Against the backdrop of fashionable slum tourism, or 'slumming', social explorers crossed the socioeconomic boundary and went into darkest London to witness what statistical numbers could not convey. While statisticians disciplined themselves not to trust their own eyes, social explorers apparently disciplined themselves not to swallow mere figures on paper but to be truthful to what they saw, heard, and experienced first-hand. It is beyond this chapter's scope to provide a detailed picture of the historical formation of the tension between the quantitative and qualitative camps of the social sciences, but the complexity of the statistician's ethos and identity that this chapter has examined would help us understand how the tension originated and why it persists to this day.

[142] Seth Koven, ed., *Slumming Sexual and Social Politics in Victorian London* (Princeton, NJ: Princeton University Press, 2006). Ellen Ross, ed., *Slum Travelers: Ladies and London Poverty, 1860-1920* (Berkeley, CA; London: University of California Press, 2007).

Conclusion

In 1877, Francis Galton submitted a report to the Council of the British Association for the Advancement of Science (BAAS) in which he proposed the abolition of Section F. While Section F was well attended and served the interests of the general public, Galton's critique attributed the apparent popularity to the lack of technical discussion at Section F.[1] He reviewed the titles of papers presented at Section F and found no discussion on the 'mathematical theory of Statistics'.[2] Even if there were, Galton speculated, they would be discussed in Section A, which was dedicated to mathematics, rather than in Section F.[3] Galton conceded that Section F dealt with important 'human knowledge', but such knowledge, Galton insisted, did not belong to science in its strictest sense.[4] Galton concluded, '[T]he general verdict of scientific men would be that few of the subjects treated of fall within the meaning of the word "scientific", and that the few of them that do would be wholly insufficient to occupy the time of the Section during the meeting'.[5]

Galton's verdict does not contradict the view that statisticians in nineteenth-century Britain only played a small role in the historical development of statistical theory until the last quarter of the century, when Galton himself started working on statistical theory.[6] Galton's reputation as a pioneer of mathematical statistics might tempt us to accept his sceptical evaluation of the then current state of statistics at face value and to conclude that statistics before 1877 had little to offer to the history of statistics.[7]

It is important to note, however, that the 'lack' of mathematical discussion in this period did not necessarily bother British statisticians of that time. The Statistical Society of London (SSL) officially opposed Galton's attack on Section F, but the SSL's defence did not aim to demonstrate mathematical sophistication in statisticians' works at Section F. Instead, the SSL portrayed statistics as a science that covers 'the whole subject of the life

[1] 'Economic Science and the British Association', *Journal of the Statistical Society of London* 40:3 (1877), 469.
[2] Ibid, 471.
[3] Ibid, 471.
[4] Ibid, 471.
[5] Ibid, 471.
[6] Donald A. MacKenzie, *Statistics in Britain 1865-1930: The Social Construction of Scientific Knowledge* (Edinburgh: Edinburgh University Press, 1981), 9–10. Stephen M. Stigler, *The History of Statistics: The Measurement of Uncertainty before 1900* (Cambridge, MA: Belknap Press of Harvard University Press, 1986).
[7] For Galton's place in the history of statistics, see Stigler, *The History of Statistics*, Ch 8. Also, see Victor L. Hilts, *Statist and Statistician* (New York: Arno Press, 1981), Part 3 and MacKenzie, *Statistics in Britain 1865-1930*, Ch.3

of man in communities' and contended its importance.[8] Through the examination of the SSL's history from the very first moment it was conceived in 1833, my thesis has revealed the scientific rationality that underlies the SSL's defence of Section F against Galton's proposal in 1877.

Statistical enthusiasts in Britain established the SSL for the collection of social facts. They envisaged statistical data collection as a communal enterprise and shaped concepts, practices, and institutions which enabled coordinated statistical observation. While the SSL's commission of original statistical surveys was limited in number and scope, the SSL's activities greatly contributed to statistics, as they assisted building a community where statistical enthusiasts could cooperate with each other. The SSL itself was conceived as a central place in the statistical community. Statisticians at the SSL designed the statistical community as an inclusive place where statistical enthusiasts could join regardless of their abilities. Statisticians were aware that a disordered influx of untrained observers' observations could overflow the statistical community with pointless reports. They addressed this issue by promoting the use of the questionnaire, which supposedly channelled volunteers' enthusiasm to the fruitful production of statistical data. The SSL committees further developed the machineries for coordinated statistical observation: they designed questionnaires and blank forms to allow only limited options of response, and they transferred intellectually demanding tasks, such as classifying one's occupation to intricate statistical categories defined by the General Register Office, from the hands of mere observers to more competent statisticians with superior competence. The introduction of a hierarchical division of labour and the simplified questionnaire design was supposed to minimise the level of necessary skills for individual observation and allow undistinguished persons to function as competent statistical observers.

Statistical fact was conceived as the aggregation of small portions of information jointly collected by numerous observers. The SSL solicited help from statistical enthusiasts and encouraged them to share their fragmental data for further aggregation. For that purpose, it held regular meetings, continued to expand a statistical library, and maintained the *Journal of the Statistical Society of London*. Through these means, statistical facts were collected, integrated, and shared publicly.

In the production of publicly available statistical data, governments became key players for their unrivalled resources and their power to marshal numerous agents for statistical

[8] 'Economic Science and the British Association', 475.

observation. As public sharing of statistical fact became commonplace in Britain, statistical enthusiasts became aware of serious issues in available statistical data. A simple problem was the absence of data on certain topics or regions. As government departments conducted statistical data-gathering in isolation from each other, the official statistics looked like patchwork with many holes in it. The establishment of a central statistical organisation was anticipated to fill those holes. The existence of contradictory data in available official statistics posed a threat to the credibility of statistical data. While it was partially caused by inaccuracies in observations, statisticians realised that the issue was deeper than it appeared on the surface. Different governmental departments conducted fact-gathering for their own specific purpose with their own definitions, classifications, and units of observation in accordance with their respective objectives. Those separately collected statistical facts appeared accurate as long as they were kept within the borders of ministerial divisions. Once they were shared publicly, however, contradictory results became evident to statisticians. The fundamental issue was the gap between the specific administrative interest of each department and the general scientific interest of statisticians. The same gap was also responsible for the endless labyrinth of official statistical documents. What appeared to be valuable information to a specific group of people with a specific task in mind were simply confusing particulars for most statistical readers outside that small circle. Statistical fact had to be versatile in order to serve the interest of analysts in a distant place and time.

Statisticians demanded complete and consistent data that covered every locality and every important statistical topic. They envisioned a central statistical organisation to address those issues. The Central Statistical Commission (CSC) in Belgium, chaired by the eminent statistician Adolph Quetelet, appeared to be a much anticipated answer to the problem with which British statisticians had been struggling. The CSC was designed on the principles that official statistics should be collected separately by different actors but that the CSC should coordinate diverse regional and ministerial interests of involved parties and ensure the unity of national statistics. The CSC as an arbitrator supposedly secured the generality of official statistics while the coexistence of various specialised departments allowed statisticians to benefit from those departments' intimate knowledge on their respective fields.

The CSC model further consolidated the state's position in the process of statistical data production since the CSC was conceived as part of the governmental organisation in Belgium. However, statisticians' ambition was beyond national borders. The International

Statistical Congress (ISC), also convened by Quetelet, was envisioned as an expansion of the CSC model. The ISC was designed as a place where statisticians across the world could translate their local interests to global and general interests and, accordingly, coordinate global-scale statistical observation. The ISC was expected to introduce unity into international statistics in the same way the CSC unified national statistics within each country. Statisticians' discussion on the optimal mode of central statistical organisation provided a frame of reference for global cooperation of statistical data production.

British statisticians were actively involved in the promotion of the CSC and the ISC with a view towards producing complete and internationally comparable statistics. Their repeated criticism of the absence of a central statistical organisation in Britain was virtually ignored. Statisticians were not successful in producing the complete and internationally comparable statistical data that they were so eager to have. The systematic production of internationally comparable statistical data had to wait at least until the creation of the United Nations. Even today, the production of reliable statistical data depends on involved organisations' careful practices, as the production of fact is a practical achievement. One can perhaps argue that 'perfect' statistical data have never existed in the course of history and that the history of quantitative social sciences has been the history of attempts to draw justifiable conclusions from 'imperfect' data. The legacy of early statistics, thus, was not the actual production of perfect statistical data. It was the concept of statistical fact against which actual statistical data should be evaluated.

The idea of perfect data aroused a new type of curiosity towards causal knowledge among statisticians. Statistical data on a specific topic over time and across places allowed statisticians to discuss environmental influence as an explanatory factor to account for the spatial and temporal variation in data. The public availability of statistical data on various topics further expanded statisticians' possibilities, as it paved the way for correlating apparently unrelated phenomena. Statisticians hoped to detect previously unsuspected causal links among social relations. Their craving to understand unknown causal links led them to the maze of statistical documents that supposedly covered every aspect of human life. Reality often disappointed statisticians, as what statisticians found in those documents was always imperfect data. Their outcry over the need for a lengthy and often unsuccessful quest for relevant statistical data was the product of the idea that numerical information previously kept separately had to be assembled into one place.

Statisticians took advantage of the comprehensive scope of statistics and attempted to usurp the throne of social sciences from political economy. The SSL was even portrayed as the Royal Society of social science; while the Royal Society should be in charge of natural knowledge, the SSL should be in charge of the human knowledge that social sciences produced. The idea that the SSL was as prestigious as the Royal Society was perhaps not taken seriously even among statisticians, but the claim to the recognition of social scientific expertise, distinguished from its natural scientific counterpart, bolstered the status of social sciences.

Statisticians were confident in their ability to discover hidden relations in society from collected facts. Their supposed capabilities of producing causal knowledge was the basis of their supposed scientific expertise in social affairs and their relevance to social policy making. Statisticians envisaged it as their mission to assess the conditions of people's lives and to propose a fact-based social reform plan. Statisticians' supposed expertise was, however, dependent on the mundane facts of social life, which were apparently observable to both statisticians and non-statisticians. This posed questions: What exactly made statisticians better observers than others? Why would anyone read faceless statistical numbers when they could go and see the actual difficulties that people were experiencing? Why should one trust statistical observation more than direct observation conducted by a credible person? Charles Dickens' caricature of statisticians was not an isolated criticism of statisticians' way of seeing. It captured the popular distrust in statisticians' apparent indifference to their immediate surroundings and questioned statisticians' claim to scientific expertise in understanding people's actual lives.

The questions were crucial for statisticians. They were aware that reading statistical tables as a way of observing society may have appeared unintuitive to those who were not familiar with statistics. In defence of statistical observation, statisticians systematically depreciated the value of direct observations. They challenged the belief that a sharp glance could instantly get to the core of social problems and contended that, no matter how great an acuity one was gifted with, what a single person could see was only a partial, and potentially one-sided, picture of the whole issue. No one could confidently identify causal effects without analysing a large number of similar cases because numerous factors were so intertwined that they concealed true causal links.

Critics of statisticians portrayed statisticians as unseeing egotists, but statisticians presented themselves as rather virtuous. They disciplined themselves to be sceptical of

causal claims based on limited cases of observation, even when those claims appeared self-evident. They learnt to question their own perceptions and put their trust in well-organised observations. What was at stake here was the effective way of knowing social conditions, but it was also about the ethics that statisticians aspired to internalise. Statisticians rejected any conclusion hastily drawn from limited, potentially exceptional cases of evidence. They patiently waited for the slow collection of statistical data because they believed it to be the surest way of eliminating the root cause of social evils. Statisticians turned the tables. Those who ridiculed statistical observation now appeared, at least to statisticians, fanciful, pretentious, and even fraudulent. In this narrative, what appeared as the statisticians' cold gaze was painted as the product of their desire for social justice. It was statisticians' supposed love for people that led them to turn their eyes away from the actual people to a dusty room filled with statistical documents. This may have 'blinded' statisticians to the individual cases in front of them, but their 'blindness' to individual cases allowed them to see the aggregated reality of society. Statisticians trusted collective vision as opposed to their personal visions. While statisticians' new ethos never convinced everyone, it did create a new generation of social scientists who would patiently wait to draw a conclusion until they saw statistical facts in their entirety, believing that this was the only way to truly reduce people's suffering.

An unprecedented number of individuals were mobilised for statistical observation across regions and countries. This expanded the coverage of statistical observation to the point that the whole world became the object of statistical observation. As the scope of coordinated statistical observation became more diverse and larger, in-depth observations on a limited number of cases depreciated. Though well-executed case studies could provide rich information on particular cases, they appeared to statisticians as potentially misleading isolated facts. Statisticians became hesitant to rely on individual observations. Statistical writing was no longer rich observations of particular places provided by educated local residents who were immersed in every aspect of life in their respective locality. Statisticians placed statistical numbers on paper at the heart of their knowledge production and social intervention. Those numbers appeared ugly and superficial to some, and perhaps even statisticians themselves, but they devoted themselves to continuously publishing colourless statistical documents. Those numbers were the product of statisticians' self-discipline and the supposed friendships they had with statisticians across the world. While the vivid descriptions of people failed to cross linguistic and cultural borders, the bland figures in those documents, statisticians believed, crossed the borders of nations, languages, and races. It would be too naïve to take Victorian statisticians'

enthusiasm for the expansion of the statistical community as an innocent expression of scientific friendship since statisticians were never inculpable of Eurocentric colonial ambition. Nevertheless, it is worth noting that statisticians' appetite for complete and comparable international statistics were motivated by the ethics they embraced. Historical inquiry into the formation of their peculiar ethics should help us understand why statistical data became an irresistibly strong language in policy making in European countries and their colonies.

Unlike social theorists who speculated about the overarching social systems, statisticians turned to mundane facts to understand social life. Statisticians helped organise statistical observation and accumulate comparable statistical data on national and international levels. Their interest in the production of uniform statistical data prompted them to engage in the creation and revision of standardised statistical categories. The proliferation of statistical classification was a historic event in the history of human sciences, as those scientific categories not only defined the objects of study but also created the object of intervention. Statisticians began to see that people who fell into certain statistical categories were more prone to commit a crime, end up in poverty, and die prematurely. Knowledge about the conditions of a subpopulation as well as a whole population allowed statisticians to devise a new mode of social intervention targeted at a group of people who belonged to a certain category as opposed to individuals. The interaction between scientific categories and people classified with those categories shaped the very people who were classified. This process of interaction also constituted statisticians as a particular type of observer who saw people through the lens of statistical category.

My thesis has demonstrated that statisticians at the SSL developed new ways of knowing and intervening in people's lives, which are still relevant to us today. They envisaged statistical fact as a basic form of knowledge of human beings in society and orchestrated the production and management of statistical data; they invented a new style of writing the lives of people; and early statistics shaped statisticians as a new type of intellectual inquirer whose mission was to learn the state of social affairs from statistical data and whose knowledge legitimised social intervention in people's lives.

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