

## Hands and Minds: Clerical Work in the First “Information Society”\*

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This article examines some aspects of the labour involved in generating, recording and transmitting information in eighteenth-century Europe. It centres on the study of a particular occupational group: the men involved in the day-to-day operations of the schemes for the marketing of life-contingent pensions which would develop into modern life insurance, a form of enterprise whose growth was deeply implicated in the emerging “information society”. The bulk of the work these men did was what we would now call clerical work: keeping and processing records and accounts, managing correspondence, preparing reports for publication. It was in the nature of the information regimes within which they worked and the kind of information they were handling, though, that the responsibilities and demands placed on them went beyond those associated with the mechanical function of recording and reproducing. This made for an occupational profile which was relatively fluid, and only gradually came to be distinguishable from other contemporary forms of middle-class employment, in terms of the disciplines peculiar to it and the hazards it incurred. Among the hazards were forms of mental and physical strain that accompanied rapid increases in the volume of data that had to be handled and in the speed of its circulation, as a direct consequence of its character as “information”. While the account focuses on the study of a particular kind of enterprise in a particular place, northwest Germany, it draws on comparative data for officers and staff in analogous forms of commercial and administrative employment in Britain. The article concludes with a consideration of how their occupational profile might fit into an extended account of the historical development of information work.

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## AN INFORMATION SOCIETY IN THE EIGHTEENTH CENTURY

In the conclusion to an article of 1999 outlining the work and mentality of British revenue officers in the eighteenth century, John Brewer issued an appeal for “more study of the routine work of minor functionaries”.<sup>1</sup> This was in the context of a volume comparing German and English manifestations of the eighteenth-century state. Brewer’s call was accordingly an invitation to examine “minor functionaries” in terms of their role in governance. As commonly happens when British and German historians meet, it presumed that the most interesting result of the study would be the differences it exposed, between servants of an absolutist garrison state orchestrating change in an ordered corporative society, and those of a fiscal-military state engaged in permanent negotiation with a population at best “polite and commercial” and at worst “ungovernable”. If we think about the work that those “functionaries” did in generic terms, however, the similarities are equally striking. The service of British revenue officers involved collecting and processing information – discrete data about individual people, places, and things which were of use in specific practical applications that interested the state. It also required the deployment of particular forms of knowledge – weights and measures, the qualities of chemical compounds, systems of calculation. Even if we confine our view to the category of servants of the state, it is clear that the emergence of this kind of work was an international phenomenon; in the German case, historians have begun to analyse cameral government in terms of the ways in which administrative innovation depended on both the self-conscious engagement with new scientific and technical knowledges and new ways of managing data.<sup>2</sup>

What is equally clear is that in collecting and processing data for administrative purposes and communicating their intentions in the course of governance, states in both Britain and Germany (and not only there) contributed in different degrees to developments in the wider culture that merit the characterization “information society”. Accounts of the information society inspired by late-twentieth-century developments

1. John Brewer, “Servants of the Public – Servants of the Crown: Officialdom of Eighteenth-Century English Central Government”, in John Brewer and Eckhart Hellmuth (eds), *Rethinking Leviathan: The Eighteenth-Century State in Britain and Germany* (Oxford, 1999), pp. 127–147.

2. Henry E. Lowood, “The Calculating Forester: Quantification, Cameral Science, and the Emergence of Scientific Forestry Management in Germany”, in Tore Frängsmyr, J.L. Heilbron and Robin E. Rider (eds), *The Quantifying Spirit in the 18th Century* (Berkeley, CA, 1990), pp. 315–341; R. Andre Wakefield, “The Apostles of Good Police: Science, Cameralism, and the Culture of Administration in Central Europe, 1656–1800”, unpublished Ph.D. dissertation, University of Chicago, 1999; *idem*, “Chemical Police”, *Science in Context*, 13 (2000), pp. 231–267.

centre on the way in which new technologies have facilitated the circulation of data, but conceive the social impact of technological change in terms both of the forms of social organization necessary to produce and sustain the technology and of changing expectations and demands on the part of its users; at each of these stages – social and material infrastructure and user demand (or consumption) – a whole range of agents is implicated, including state agencies, commercial and industrial organizations, and members of the public as individuals or in association with others.<sup>3</sup> “Information” in this context is something distinct from knowledge; it refers to discrete bits of knowledge, and implies an expectation of easy and relatively indiscriminate access on the presumption of their potential usefulness, such that information appears to become a commodity and the generation of information an end in itself.<sup>4</sup> Daniel Headrick, locating an information revolution in the eighteenth century, has accordingly described its key components in terms of organizational, computational, and representational practices which reduced complex knowledges to transparent assemblages of manageable data.<sup>5</sup> Organized into tables, taxonomies, and encyclopedias, these data then became available for application in the development of new knowledges and techniques – but also as items of curiosity and circulation in their own right. The sign and engine of a new information regime was the expansion of the periodical press. At differing paces in different national and regional contexts, developments in the transport and communications infrastructure responded to the demand that information be able to move as quickly as it was generated.<sup>6</sup> The social infrastructure, too, was transformed. Although the impetus for collecting and disseminating data might originate with the state, circulation was promoted by new social institutions which could have a purely “civil society” or a hybrid character. Reading circles and clubs merged into circulating libraries, which abandoned the vision of the library as a storehouse of knowledge for that of a place where the public could access the latest in opinions, emotional sensations, or scientific discoveries. In the German case, the same informal circles also have been

3. David Lyon, *The Information Society: Issues and Illusions* (Cambridge, 1988); John Feather, *The Information Society: A Study of Continuity and Change* (London, 1988).

4. Cf. Thomas Richards, *The Imperial Archive: Knowledge and the Fantasy of Empire* (London, 1993), p. 5 – a work which otherwise emphasizes the arcane and secretive aspects of information management in modern states.

5. Daniel Headrick, *When Information Came of Age: Technologies of Knowledge in the Age of Reason and Revolution, 1700–1850* (Oxford [etc.], 2000).

6. On the links between press circulation, postal services and road-building, see Margot Lindemann, *Deutsche Presse bis 1815* (Berlin, 1969), p. 38; Michael Harris, *London Newspapers in the Age of Walpole* (Rutherford, NJ [etc.], 1987), pp. 19–32.

described as forming the basis of a potentially political associational culture.<sup>7</sup>

With the rise of public finance and the growth of popular investment and speculation, the need for accurate (or plausible) information was shared by states, entrepreneurs, and private individuals. Commercial data ceased to be something communicated between merchants and brokers in a fixed geographical location (the exchange) and became a matter of public interest; information (and misinformation) about events in the realms of politics, exploration, and science and technology increasingly played a material role in individual commercial decisions which cumulatively affected the fates of nations. Information also became an object of consumption in developing consumer economies, depending as they did on the dissemination of advice about both what was to be had and what people ought to want. The “furious itch of novelty” produced an “immoderate appetite of intelligence”,<sup>8</sup> and the passion for refining and disseminating useful knowledge associated with popular Enlightenment found its voice in the same media organs that carried advertising and a delightfully undifferentiated category: “news”.<sup>9</sup>

#### INFORMATION WORK

These developments led to changes in familiar kinds of work and also to new forms of employment. As has been pointed out, the work of “minor functionaries” like revenue officers, mines inspectors, or foresters involved

7. Jürgen Habermas, *Strukturwandel der Öffentlichkeit* (Darmstadt [etc.], 1962). For examples of the extensive discussions around Habermas’s concept of “public-sphere” work, see Craig Calhoun (ed.), *Habermas and the Public Sphere* (Cambridge, MA, 1992); Peter Uwe Hohendahl (ed.), *Öffentlichkeit. Geschichte eines kritischen Begriffs* (Stuttgart [etc.], 2000).

8. From *The British Mercury* of 1712, cited by Robert Iliffe, “Author-Mongering: The ‘Editor’ between Producer and Consumer”, in Ann Bermingham and John Brewer (eds), *The Consumption of Culture 1600–1800: Image, Object, Text* (London [etc.], 1995), pp. 166–192, 166.

9. On the role of commercial information in the emergence of modern capitalism, see Larry Neal, *The Rise of Financial Capitalism* (Cambridge, 1993), pp. 20–43. For studies that emphasize the centrality of broadly commercial impulses to the development of a “print-based public sphere”, see Colin Jones, “The Great Chain of Buying: Medical Advertisement, the Bourgeois Public Sphere, and the Origins of the French Revolution”, in Ronald Schechter (ed.), *The French Revolution: The Essential Readings* (London, 2001), pp. 138–174; Shelley Costa, “Marketing Mathematics in Early Eighteenth-Century England: Henry Beighton, Certainty and the Public Sphere”, *History of Science*, 40 (2002), pp. 211–232. See also Peter Burke, *A Social History of Knowledge: From Gutenberg to Diderot* (Cambridge, 2000), pp. 149–176. On early advertising in Germany, see Heidrun Homburg, “Werbung – ‘eine Kunst, die gelernt sein will’. Aufbrüche in eine neue Warenwelt 1750–1850”, *Jahrbuch für Wirtschaftsgeschichte*, (1997:1), pp. 11–52. For an anthropologist’s interpretation of consumption as an “information system”, see Mary Douglas and Baron Isherwood, *The World of Goods: Towards an Anthropology of Consumption*, 2nd edn (London, 1996).

specialist knowledges and techniques for recording and managing data which were new and subject to the expectation of continuous refinement. Other kinds of workers found their ancient duties supplemented by the needs of the state to inform and be informed: German Protestant ministers had always been responsible for a certain amount of record-keeping, maintaining the parish register and keeping the minutes of church consistories. In eighteenth-century rural parishes, their responsibilities were enlarged by having to extract vital statistics from the register for the use of public officials and supervise the circulation and cataloguing of official notices sent from the centres of government.<sup>10</sup> In banking and mercantile enterprises, the routine work of record-keeping expanded in volume with the multiplication of the categories of relevant information and the growth in the number of users,<sup>11</sup> while new forms of enterprise emerged that depended entirely on the collection and management of information from a wide range of sources; the best example of this is insurance. Beyond this, the demand for information and its multifarious uses, the widening awareness of what was knowable combined with the increasing ease of circulation, generated an information regime in which all actors in the public realm were subject to a new degree of scrutiny. The result was that information control was added to the work of clerical and administrative staff in both state and private employment.

Greg Downey has commented on the tendency of both academic and popular discussions of today’s information society to overlook or suppress the human labour involved in information networks.<sup>12</sup> In the case of contemporary information systems, this blindness is a function of a technology so advanced that it seems to “do” itself. Paradoxically, the labour that sustained the first information society has also remained largely invisible in the literature, but (I suspect) largely because of its “low-tech” quality. Unlike telegraphers and telephonists, whose work has been

10. David Warren Sabean, “Peasant Voices and Bureaucratic Texts: Narrative Structures in Early Modern German Protocols”, in Peter Becker and William Clark (eds), *Little Tools of Knowledge: Historical Essays on Academic and Bureaucratic Practices* (Ann Arbor, MI, 2001), pp. 67–93; Reiner Prass, “Die Brieftasche des Pfarrers. Wege der Übermittlung von Informationen in ländlichen Kirchengemeinden des Fürstentums Minden”, in Ralf Pröve and Norbert Winnige (eds), *Wissen ist Macht. Herrschaft und Kommunikation in Brandenburg-Preußen 1600–1850* (Berlin, 2001), pp. 69–82.

11. H.M. Boot, “Salaries and Career Earnings in the Bank of Scotland, 1730–1880”, *Economic History Review*, 4 (1991), pp. 629–653, 631. Boot comments that, in spite of the increased volume of business, the number of tellers only doubled, while clerks more than trebled and domestic and portering staff increased five-fold; the differential degrees of increase suggest that there was a multiplier effect such that an increase in the volume of “front office” business led to a still greater growth in the demands on internal record-keeping, external accountability, and correspondence.

12. Greg Downey, “Virtual Webs, Physical Technologies, and Hidden Workers: The Spaces of Labor in Information Networks”, *Technology and Culture*, 42 (2001), pp. 209–235.

the subject of historical research, early modern information workers cannot be perceived as directly subject to the rhythms of a new mechanical or technical process. Even printing was no longer new in the eighteenth century. Nor did all public communication take printed form. Robert Darnton has described mid-eighteenth-century Paris as an “information society”, in spite of the paucity of printed news media that resulted from a tight government controls; in France a considerable part of the eighteenth-century hunger for news was fed by manuscript sheets produced in workshops full of copyists.<sup>13</sup> The more important innovations were the “technologies of knowledge” (Headrick) which made information into something available and desirable. It was the pressure placed on familiar resources (both muscles and nerves)<sup>14</sup> by changing demand that made the handling of information a new kind of work.

Recent work in the history of modern science has taught us to see the production of knowledge in this period in terms of labour process. We now see the laboratory as a space in which both the actions of scientists and their cognitive consequences are mediated through contingent forms of social organization, within the scientific workplace and in the wider community of those interested in the “product”.<sup>15</sup> It has been shown how the observation and recording of data required not only collective effort but the imposition of new disciplines on the body of the observer, and new controls on those charged with keeping records.<sup>16</sup> Conversely, we have learned that the emergence of modern machine calculation or cybernetics involved self-conscious reflection on the character of mental calculation as a laborious process, in terms that echoed the discourses of labour discipline generated by emergent industrialism.<sup>17</sup> All of these approaches remind us

13. Robert Darnton, “An Early Information Society: News and Media in Eighteenth-Century Paris”, *American Historical Review*, 105 (2000), pp. 1–35. On the persistence of manuscript culture, see François Moureau, “La plume et le plomb”, in F. Moureau (ed.), *De bonne main. La communication manuscrite au XVIIIe siècle* (Oxford, 1993), pp. 5–16. On the social impact of printing before mechanization, see most recently the exchange between Elizabeth L. Eisenstein and Adrian Johns, “AHR Forum: How Revolutionary was the Print Revolution?”, *American Historical Review*, 107 (2002), pp. 84–128.

14. Cf. Laura Levine Frader, “From Muscles To Nerves: Gender, ‘Race’, and the Body at Work in France 1919–1939”, *International Review of Social History*, 44 (1999), Supplement 7, pp. 123–147.

15. The *locus classicus* for this approach to the “scientific revolution” is still Steven Shapin and Simon Schaffer, *Leviathan and the Air Pump: Hobbes, Boyle and the Experimental Life* (Princeton, NJ, 1985).

16. Simon Schaffer, “Astronomers Mark Time: Discipline and the Personal Equation”, *Science in Context*, 2 (1988), pp. 115–145; William J. Ashworth, “The Calculating Eye: Baily, Herschel, Babbage and the Business of Astronomy”, *British Journal of the History of Science*, 27 (1994), pp. 409–441, 434–437.

17. Andrew Warwick, “The Laboratory of Theory, or What’s Exact About the Exact Sciences?”, in Norton Wise (ed.), *The Values of Precision* (Princeton, NJ, 1995), pp. 311–351; William J. Ashworth, “Memory, Efficiency and Symbolic Analysis: Charles Babbage, John Herschel and the Industrial Mind”, *Isis*, 87 (1996), pp. 629–653.

that there is work going on in what we always pictured as a sweat-free zone, and draw our attention also to the way in which knowledge-based discourse is productive of new realities, what Theodore Porter (in a discussion of the “craft dimension of quantification”) refers to as “the administrative creation of new things”.<sup>18</sup> Similarly, research on early modern print culture has moved from an exclusive focus on the texts to consider the social and material infrastructure for their production and circulation.<sup>19</sup> Studies of both laboratory and “literary” (Adrian Johns) life, as also of the business of public administration, are thus increasingly giving attention to “how things worked”. In the process they are beginning to illuminate the spaces in which the quotidian labour took place that made innovation possible.<sup>20</sup>

### THE CALENBERG

This essay looks into one of those spaces, to examine the ordinary but indispensable work of generating, storing, and moving bits of knowledge using (mainly) pen and paper. It examines the situation of a particular group of “minor functionaries”: clerical workers in the emerging life-insurance business. Specifically, these were men involved in schemes for the provision of survivors’ pensions, or widows’ funds. Widows’ funds were created all over northern Europe, beginning in the late seventeenth century; in Germany, there were two waves of founding, one around 1700 and a second at mid-century. They were typically created on an associational basis by groups of middle-class men (in the first instance, usually clergy), although in the German lands some of them were promoted by territorial governments. They offered pensions for widows, at levels guaranteed in advance, on the basis of a cash deposit and regular contributions over the lifetime of the husband. Their operations were more

18. Theodore M. Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton, NJ, 1995), p. 47.

19. Adrian Johns, *The Nature of the Book: Print and Knowledge in the Making* (Chicago [etc.], 1998); Pamela E. Selwyn, *Everyday Life in the German Book Trade: Friedrich Nicolai as Bookseller and Publisher in the Age of Enlightenment 1750–1810* (University Park, PA, 2000); Robert Darnton, *The Business of Enlightenment: A Publishing History of the Encyclopédie 1775–1800* (Cambridge, MA, 1979). In continental library history, attention to the day-to-day work of the staff of circulating libraries remains a desideratum; see Roger Chartier, *The Order of Books: Readers, Authors and Libraries in Europe between the Fourteenth and Eighteenth Centuries*, Lydia G. Cochrane (transl.) (Cambridge, 1994); Jeffrey Garrett, “Redefining Order in the German Library 1775–1825”, *Eighteenth-Century Studies*, 33 (1999), pp. 103–123; Kurt Habitzel and Günter Mühlberger, “Die Leihbibliotheksforschung in Deutschland, Österreich und der Schweiz: Ergebnisse und Perspektiven”, *Internationales Archiv für Sozialgeschichte der deutschen Literatur*, 22 (1997), pp. 66–108.

20. See, for example, Steven Shapin’s chapter on Robert Boyle’s technicians and servants: Steven Shapin, *A Social History of Truth: Civility and Science in Seventeenth-Century England* (Chicago [etc.], 1994), pp. 355–408; Wakefield, “The Apostles of Good Police”, pp. 1–42.

primitive than those of the modern life insurance schemes that succeeded them. Indeed their almost universal experience of financial failure has been seen as the necessary precondition for the emergence of full-blown premium insurance in the late eighteenth century. In the German case, it is clear that the collapse of a number of large funds in the glare of nationwide publicity from the late 1770s onwards spurred the reception of statistical probabilism there. But their founders did practise a form of actuarial accounting, scaling contributions to the ages of husband and wife on the basis of principles gleaned from the study of tables of mortality. In this sense, the widows' funds, like premium life insurance, were highly information-sensitive; they depended on the effective application of accurate data, and the men who worked for them from mid-century onwards were continuously involved in studying new mortality statistics and devising new ways of reading and applying them. Widows' funds were also implicated in information networks by virtue of their dependence on advertising and publicity. What distinguished these funds from more traditional forms of mutual provision for social security was that they recruited from the general public and increasingly relied on continuous recruiting, or continuous growth, to sustain their operations. This implied both a convincing address to the public and competition among funds for customers as well as for information and technical expertise.<sup>21</sup>

The present account is based on the manuscript and published records of the largest of the German funds, the Calenbergische Witwen-Verpflegungs-Gesellschaft, or Calenberg, and focuses on the men who made their careers in the new enterprise. Founded in Hanover in 1766, the Calenberg was exceptional among contemporary widows' funds, but in ways that make it useful as an extreme exemplar of the features set out above. It was created and operated by an organ of state, the territorial estates (*Landschaft*) of the Hanoverian Principality of Calenberg. The fund was administered by the Treasury Committee of the *Landschaft*, and all decisions were subject to ratification by the Crown Office, King George III's viceregal deputies in Hanover. At the same time it was a highly public enterprise. For complicated operational reasons, it was peculiarly reliant on continuous growth, and adopted an exceptionally adventurous approach to recruitment, being the only fund in Germany to recruit not only beyond the borders of the Hanoverian territory but all

21. J.C. Riley, "‘That Your Widows May Be Rich’: Providing for Widowhood in Old Regime Europe", *Economisch- en sociaal-historisch jaarboek*, 45 (1982), pp. 58–76; Bernd Wunder, "Pfarrwitwenkassen und Beamtenwitwen-Anstalten vom 16.–19. Jahrhundert", *Jahrbuch für historische Forschung*, 12 (1985), pp. 429–498; Geoffrey Wilson Clark, *Betting on Lives: Life Insurance in English Society and Culture 1695–1775* (Manchester, 1999); Ludwig Arps, *Auf sicheren Pfeilern. Deutsche Versicherungswirtschaft vor 1914* (Göttingen, 1965); Peter Borscheid, *Mit Sicherheit leben. Die Geschichte der deutschen Lebensversicherungswirtschaft und der Provinzial-Lebensversicherungsanstalt von Westfalen* (Greven, 1989).

over Europe.<sup>22</sup> It was consequently the largest widows' fund in Germany (possibly in Europe) at the point when it went into crisis in 1779–1780, but one that was exposed both to intense competition and, once the crisis set in, to scrutiny from many quarters.

#### ANTON DIES: A CAREER IN INFORMATION MANAGEMENT

The first man to carry significant responsibility for the day-to-day operation of the Calenberg was Anton Dies. All the indications are that he was a self-made man.<sup>23</sup> He was born in Hanover 1726, the youngest of seven children of an invalid soldier. There is no evidence that he attended any university, and his lack of higher education is further suggested by the fact that he married at the age of twenty-two; his bride, the daughter of a corporal, was in an advanced stage of pregnancy at the time. Dies was someone whose entire life was defined by his involvement with information in its various forms, as his career took him from one innovative institution to another.

Dies's first recorded appointment was in the Hanover Intelligenz-Comtoir, or information office, which opened in 1750.<sup>24</sup> Information offices were characteristic institutions of enlightened territorial government in Germany: clearing-houses for official notices, news, job offers and enquiries, notices of goods for sale, items lost and found, and so on. Of uncertain genealogy, the Intelligenz-Comtoir was surrounded in public discourse with the aura that reflected the hopes of a new information age.

22. On the history of the Calenberg widows' fund, see Reinhard Oberschelp, *Niedersachsen 1760–1820*, 2 vols (Hildesheim, 1982), vol. 1, pp. 230–237; William Boehart, "[...] nicht brotlos und notleidend zu hinterlassen" (Hamburg, 1985). I have dealt with aspects of demand, recruitment, operation, and crisis in the Calenberg and other German widows' funds in two forthcoming articles: Eve Rosenhaft, "But the Heart Must Speak for the Widows: The Origins of Life Insurance in Germany and the Gender Implications of Actuarial Science", in Marion Gray and Ulrike Gleixner (eds), *Gender in Transmission: Breaks and Continuities in German-Speaking Europe 1750–1850* (Ann Arbor, MI, 2003); *idem*, "Did Women Invent Life Insurance? Widows and the Demand for Financial Services in Eighteenth-Century Germany", in David R. Green and Alastair Owens (eds), *Family Welfare: Gender, Property and Inheritance Since the Seventeenth Century* (Westport, CT, 2003).

23. Heinrich Wilhelm Rotermund, *Das gelehrte Hannover*, vol. 1 (Hanover, 1823) (as cited in *Deutsches Biographisches Archiv*). For data on Dies's family, see Jürgen Ritter (ed.), *Garnison-Kirchenbuch Hannover 1690–1811*, vols 3 and 4 (Hanover, 1990–1991), entries 7951 (Pape) and 10752 (Ties); entries in the registers of St Aegidien, Marktkirche, and Neustädter Hof- und Stadtkirche, Evangelisches Kirchenbuchamt Hanover.

24. Preface to bound volume of first half-year (1750) of *Hannoversche Gelehrte Anzeigen*. The records of the Hanover Intelligenz-Comtoir were destroyed in 1943, along with other holdings of the Niedersächsisches Hauptstaatsarchiv, Hanover; the original files began in 1732, suggesting that the institution was under consideration from a relatively early date; see letter from the Archives to the author, 30 September 2002.

The earliest German proposal for the creation of an *Intelligenz-Comtoir*, published by Wilhelm von Schröder in 1683, began as an exercise in cameralist thinking, but culminated in the utopian vision of a single, universal market in which the rapid and unimpeded flow of information would promote the free circulation of goods and money.<sup>25</sup> Eighteenth-century writers celebrated the *Intelligenz-Comtoir* as an agency for social integration; it could both aid strangers to find their way in the city and bind together the citizens who participated in the sharing of information, translating a common curiosity into a common interest.<sup>26</sup> The principal means by which the latter effect was to be achieved was the publication of printed intelligencers. Some 220 separate regionally circulating intelligencers (*Intelligenzblätter* or *Anzeiger*) formed the basis for a popular press in eighteenth-century Germany, as many expanded to include longer critical and scientific articles while others remained essentially news-sheets but increased their frequency of publication.<sup>27</sup> In some towns, the *Intelligenz-Comtoir* also operated a circulating library.<sup>28</sup> Working in the *Intelligenz-Comtoir*, Dies might thus have had any one (or more) of a number of functions: receiving and registering items of information delivered from Crown or local administrative offices or brought into the office or posted by individuals; keeping accounts; writing up or editing copy for the intelligencer; fetching books, recording loans and returns, or corresponding about unpaid fees or lost or damaged books in the library. This involved an interface with the information-hungry and information-sensitive public which could be problematic. Order had to be maintained

25. Wilhelm Freyherr von Schröder, *Fürstliche Schatz- und Rent-Kammer* (Leipzig, 1704), pp. 393–407.

26. E., “Über das Intelligenzwesen”, *Braunschweigisches Magazin*, 1788/1, col. 1–16; reprinted in Reinhard Oberschelp, *Niedersächsische Texte 1756–1820* (Hildesheim, 1983), pp. 320–327; “Kurze Nachricht von dem vermuthlich ersten Vorschlag, ein Intelligenz-Comtoir anzulegen”, *Hannoversches Magazin*, 1764/2, col. 1463–68. Cf. Homburg, “Werbung”, pp. 20–25; Lindemann, *Deutsche Presse*, pp. 248–255. Peter Burke cites developments of this kind outside Germany, noting the intimate historical relationship between the rise of urbanism and the anonymity and uncertainty of city life and the demand for information (in practice, the intelligencers also brought information generated in the urban centres to the rural elites); see Burke, *Social History*, pp. 70–74. Gilles Feyel, *L’Annonce et la nouvelle. La presse d’information en France sous l’Ancien Régime (1630–1788)* (Oxford, 2000), provides a sketch of the the operation of French information offices (pp. 454–456 and 796–814), and outlines the mutual influence of English, French and German models (pp. 605–629) for the information office and the printed intelligencer.

27. Holger Böning, “Das Intelligenzblatt – eine literarisch-publizistische Gattung des 18. Jahrhunderts”, *Internationales Archiv für die Sozialgeschichte der deutschen Literatur*, 19 (1994), pp. 22–32 (review article); Bernd Wunder, “Vom Intelligenzblatt zum Gesetzblatt. Zur Zentralisierung inner- und außeradministrativer Normkommunikation in Deutschland (17./18. Jahrhundert)”, *JEV – Jahrbuch für europäische Verwaltungsgeschichte*, 9 (1997), pp. 29–82.

28. *Verzeichniß derjenigen [...] Bücher und neuesten deutschen Schriften, welche in der im hiesigen Intelligenz-Comtoir [...] ausgeliehen werden* (Göttingen, 1769).

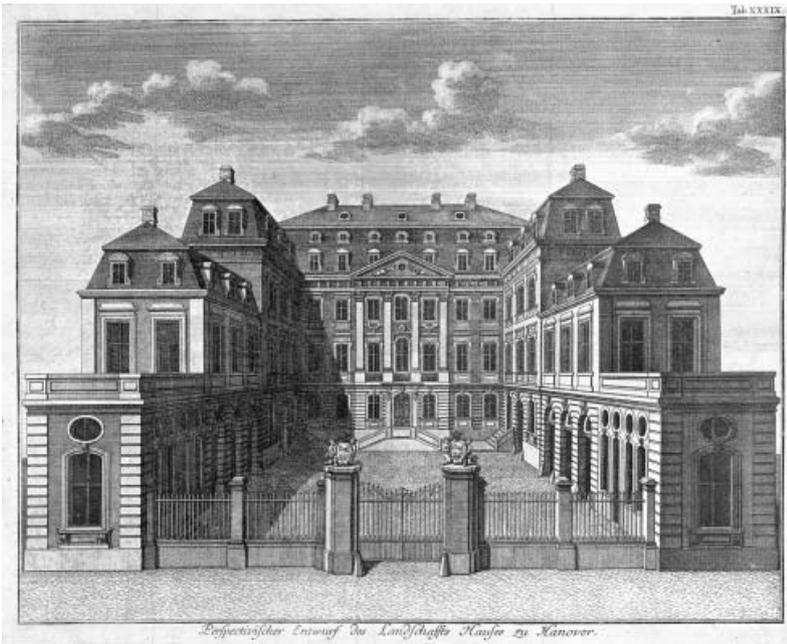


Figure 1. The Landschaftshaus in Hanover, built 1712. The office provided for the Registrator in the original plans was on the first floor (Bel-étage) at the rear, overlooking a garden.

From: Johann Friedrich von Penther, *Vierter Theil einer ausführlichen Anleitung zur bürgerlichen Bau-Kunst* (Augsburg, 1748).

Reproduction courtesy of Historisches Museum Hannover.

among people who gathered inside and outside the office, sometimes to complain about something that had been published. And individuals placing or responding to advertisements would persist in corresponding via the *Intelligenz-Comtoir*, thus adding to the already considerable business of writing and forwarding letters.<sup>29</sup>

For a man with intellectual ambitions and the urge to serve the public good, there were advantages to being at the nexus of public communication, too. That Dies was such a one is evidenced by his participation in a kind of actuarial quiz run by the Hanover intelligencer in 1760.<sup>30</sup> Dies's

29. For examples of problems, see Decrees of Karl, Duke of Braunschweig and Lüneburg, on the management of the Braunschweig *Intelligenz-Comtoir*, 29 November 1745 and 31 January 1746, in *Staats- und Universitätsbibliothek Göttingen*; “Nachricht, die Hannoverischen Anzeigen betreffend”, *Nützliche Sammlungen vom Jahre 1757*, 3, not paginated.

30. A. Dies, “Fünfte Beantwortung des ausserordentlichen Gerichtsvorfalles”, *Hannoversche Beyträge zum Nutzen und Vergnügen*, 1760/2, no. 61 (1 August 1760), col. 971f. The task was to solve a problem involving the distribution of an inheritance in the unanticipated case of twins being born.

appointment to a position at the Intelligenz-Comtoir probably dates from that year; it took place at the instance of the manager of the office, Albrecht Christoph von Wüllen, who had known Dies at least since 1755, when he stood as godfather to Dies's first-born son.<sup>31</sup> In Hanover, the Intelligenz-Comtoir was administered by the *Landschaft* and housed in its assembly house (*Landschaftshaus*). The annual prize essay competitions promoted by the Göttingen Scientific Society were sponsored by the *Landschaft* from the income of the Intelligenz-Comtoir. In 1763 and 1764, at the prompting of the *Landschaft*, the Society selected as the topic for the prize in economics the best way to organize a widows' fund. Dies submitted an essay under the title *Patriae sacrum* for the second round, and, while he failed to win the prize, the essay was deemed worthy of publication.<sup>32</sup> Through the continuing patronage of von Wüllen, Dies was drawn into the process of planning what would become the Calenberg, carrying out all the necessary calculations.<sup>33</sup> In April 1767, the fund went into operation. On 7 May, Dies was appointed keeper of accounts (*Rechnungs-Führer*) to the new widows' fund, with the formal title of Registrar.<sup>34</sup>

Von Wüllen had already approached Dies about taking up the post in November 1766. Dies's reply is an illuminating document of both the material circumstances and the mentality of eighteenth-century information workers. He avowed that the question of the size of his salary had made for a sleepless night. His response was to enumerate his household, beginning with his six children, "who thank God are fresh and healthy and like to eat. My desire to raise them to fortune and see that they are taught as much as will go into their heads is as strong as a father's can be".<sup>35</sup> He "costed" them at 50 Rtl a head, as he did the nurse and housemaid in his employ, and himself and his wife at 100 Rtl each. Five of his children were under twelve, and this meant that any landlord in a desirable neighbourhood would charge a premium for the disturbance. If a separate office were needed, too, he would need 60 Rtl for rent and 40 Rtl for fuel. While he

31. This is clear from a letter of Dies written in 1766; see Pro Memoria (Dies to von Wüllen), 1 November 1766, Niedersächsisches Hauptstaatsarchiv Hannover (HStAHann), Dep. 7B, vol. 326I, pp. 130–132.

32. On the prize competition: *Göttingische Anzeigen von gelehrten Sachen* 1763, no. 138, p. 1116; 1764, no. 89, pp. 714–715; 1765, no. 95/96, pp. 769–771; 1766, no. 154, p. 1226; Johann David Michaelis, "Nöthige Aufmerksamkeit, die man bey Vorschlägen zu Einlegung guter Witwencassen beobachten muß", in *idem*, *Vermischte Schriften*, 2 vols (Frankfurt a. M., 1766–1769), vol. 2, pp. 99–117.

33. Minutes of a meeting of the Treasury Committee 26 March 1767, HStAHann, Dep. 7B, vol. 326II, pp. 339–342.

34. "Instruction für den zu der Calenbergischen allgemeinen Witwen Verpflegungsgesellschaft bestellten Rechnungsführer Registrator Dies", HStAHann, Hann. 93, vol. 3706, pp. 316–320.

35. At least one of Dies's children proved a disappointment in this respect, but became more famous than his father: Albert Christoph, born in 1755, abandoned the academic path marked out for him and apprenticed himself to a painter; he became a well-known landscape artist: *Deutsches Biographisches Archiv*.

conceded the principle that two could live as cheaply as one, he also pointed out that his estimate took no account of the need to save for “christenings, sickness, death and the like”. His conclusion aimed at the right balance of humility and firmness, inviting his patron to acknowledge that “in the past few years I really have earned as much, and more”, while recognizing the grace of God in providing him with a patron who had given him the opportunity to do so – “even against my will”. Grateful to have been given the chance to serve his country, and wanting nothing more than the means to continue, he closed with an expression of guarded confidence in the Treasury Committee, “of which I am assured that it knows how to set a wage according to the workload and the circumstances of the time, *which is no longer the last century*”.<sup>36</sup>

In the event, Dies was awarded not the 700 Rtl he had claimed, but 500 Rtl a year payable semi-annually – a middling income which placed him financially among postmasters, provincial non-graduate physicians, other clerical and administrative staff in state service, and the highest-earning skilled tradesmen.<sup>37</sup> The members of the Treasury Committee regarded this as relatively generous, but were prepared to recommend it to the Crown on the grounds that they intended to forbid Dies from undertaking any other form of paid work without their express permission, “lest he be distracted in his work”. Nor was he permitted to act as an agent for any subscriber (policyholder) or group of subscribers. Dies’s *Caution* – the surety required of all staff charged with the handling of money – was set at 3,000 Rtl, two-thirds of which was guaranteed in the first instance by a certain Johann Christoph Eisendecker.<sup>38</sup>

Dies’s duties were spelled out in a set of instructions. He was to process applications for membership and the supporting documents (proof of age and health of both husband and wife); keep minutes of the meetings which considered applications; correspond with applicants and their agents; and fill in the membership certificates. Dies had to be present on the occasions when the Treasurer received and returned subscribers’ deposits to keep a record of all payments. He was to keep a careful record of all those joining the fund and of all who left, whether through resignation, remarriage, or death, to work out what was owing to them in returned contributions or dowry payments (widows were offered a lump sum in lieu of dowry as incentive to remarry), to draw down the money from the Treasurer and pay it out. Every six months he was to produce an account of pensions owed for the Committee, and, on their authorization, draw down the required funds and pay the pensions directly to the widows or their agents,

36. Pro Memoria (Dies to von Wüllen), 1 November 1766, emphasis mine.

37. *Anhang zu der Personensteuer-Verordnung für die Fürstentümer Calenberg und Göttingen vom 9. August 1763*, in Oberschelp, *Niedersächsische Texte*, pp. 148–158.

38. PM Brandes, 10 August 1767 and Crown Office to *Landschaft*, 19 April 1768, HStAHann, Hann. 93, vol. 3706, pp. 337–338, 361.

who came to the *Landschaftshaus* to collect them; here too he was to maintain a journal and a file of receipts. Once the pensions had been disbursed, Dies had to work out the subscribers' contributions for the next half-year: In the Calenberg, subscribers contracted for a certain number of units, or *Simpla*, reflecting both the size of the pension contracted for and the ages of husband and wife. The money value of the *Simplum* was recalculated every six months in the light of current charges on the fund (notably the size of the last pensions bill) and predicted income.<sup>39</sup> When a rate was approved, subscribers had to be notified. Notification of the contribution rates took place in the context of a general account, published twice a year, which reported on current membership numbers, pensions owing, income, and outgoings, and also included news of changes in regulations. These *Avertissements*, which in Dies's time could be up to eight pages long, were issued as separate publications for posting to subscribers; the Treasury Committee also made a point of seeing that the reports, or digests of them, were placed in the principal intelligencers.<sup>40</sup> Beyond simply calculating the rate for the *Simplum*, then, Dies had to draw up semi-annual tabulations of membership, income, and outgoings and to draft the *Avertissements* for publication. The original instructions provided for him to produce in duplicate semi-annual lists of all individual subscribers, wives and widows and their details, showing (as appropriate) their ages, number of *Simpla* or pension payable, and dates of death or remarriage, with all supporting documentation attached. Once the contributions rates were known, subscribers or their agents had to come to the *Landschaftshaus* to make payment, and it was Dies's job to take the payments in, record them, and pass the money on to the Treasurer. He was responsible for keeping a record of subscribers whose contributions were in arrears, issuing reminders, and making arrangements for persistent defaulters to be expelled from the fund. He was strictly forbidden to hold more than 3,000 Rtl at any one time, or to handle fund money at home. During the six months of the year designated for admitting new subscribers and making and receiving payments, he was obliged to spend every morning from 9 am to 12 noon in an office in the *Landschaftshaus*. Beyond these specific tasks, the document prescribed a wider duty of care; the very first obligation laid on Dies, after the injunction to follow the orders and instructions of the *Landschaft* Treasury Committee which administered the fund, was "to foster the interests of the society according to the best of his knowledge and conscience, and as far as is in his power forestall any damage or disadvantage".

39. *Verordnung, behuef der von Calenbergischer Landschaft anzulegenden Witwen-Verpflegungs-Gesellschaft* (14 October 1766), HStAHann, Cal. Br. 23b, vol. 579 (n.p.).

40. See, for example, a letter from the publisher of the *Hamburgischer Correspondent* to the Treasury Committee, 23 May 1767, and attached copy of the *Hamburgischer Correspondent* for 9 May 1767, HStAHann, Dep. 7B, vol. 326II, pp. 208–210.

Figure 2. The Calenberg semi-annual report for August 1783, in Anton Dies's hand. Niedersächsisches Hauptstaatsarchiv Hannover. Reproduced with permission.

DIES AMONG INFORMATION WORKERS, INFORMATION WORKERS AMONG CLERICAL WORKERS

Before going on to relate how Dies's job developed, it is worthwhile pausing to consider the occupational and career profile represented by the terms and method of his employment. His experience in this respect offers points of comparison with that of some contemporary groups on which published data are available. These include clerks, secretaries, and minor officials in more conventional forms of public service in Germany, and employees in merchant houses, insurance offices, and banks. They also include the employees and officers of two British institutions in some respects mark the poles between which Dies's work was situated: the Excise and the Royal Society.<sup>41</sup> There are many points of overlap which

41. What follows is based on: Luise Schorn-Schütte, *Evangelische Geistlichkeit in der Frühneuzeit* (Gütersloh, 1996); Stefan Brakensiek, *Fürstendiener – Staatsbeamte – Bürger. Amtsführung und Lebenswelt der Ortsbeamten in niederhessischen Kleinstädten (1750–1830)* (Göttingen, 1999); Hartmut Dahlweid, "Verwaltung und Verwaltungspersonal in Lippe im 18. Jahrhundert", in Neihart Bulst, Jochen Hoock, and Wolfgang Kaiser (eds), *Die Grafschaft Lippe im 18. Jahrhundert. Bevölkerung, Wirtschaft und Gesellschaft eines deutschen Kleinstaates* (Bielefeld, 1993), pp. 303–369; Jacob M. Price (ed.), "Directions for the Conduct of a Merchant's Counting House, 1766" (a document from the records of Herries & Company, London),

make it possible to situate Dies in a broad and, to the eighteenth century, familiar category of middle-class employment. There are also some particularities which Dies's situation shares with some others, that suggest some specific features of work with information.

The qualifications for work of this kind were as much personal as formal. Literacy and numeracy were obvious preconditions. Even in the seventeenth century, though, German manuals for secretaries emphasized that any artisan could read, write, and reckon. What qualified the clerk, and more particularly the secretary, was knowledge and understanding of his employer's business and of the methods and practices appropriate to it, along with personal qualities that added up to gentility. Both occupational and social skills were things that were learned on the job, though much was to be gained through self-study. The formularies, manuals, and advice books of the eighteenth century were aimed as much at aspirants to higher clerical employment as at those already in post.<sup>42</sup> The key qualifications were thus intelligence and willingness to learn. The reward was a career structure characterized by the reasonable expectation of internal promotion on the basis of experience and performance. Work that involved direct engagement with new fields of knowledge and new technologies also provided scope for self-realization, and provided access to the more gentlemanly status associated with membership in a scientific community. Dies's ambition to combine his accounting duties with more speculative or inventive work in applied mathematics echoes the experience of officers of the Royal Society. Edmond Halley, for example, began his career in 1685/1686 as clerk to the Society. The position involved nothing more eminent than assisting the secretaries, fair-copying letters and minutes, and transcribing letters received, and he took it on in the midst of a crisis incurred by the secretaries' increasing workload. Halley not only successfully fulfilled his clerical duties, but managed at the same time to

*Business History*, 28 (1986), pp. 134–150; *Merkwürdige Lebensbeschreibungen verschiedener Kaufleute und Handlungsdiener nach ihren glücklichen und unglücklichen Gegebenheiten*, 3 vols (Hamburg [etc.], 1771, 1772, 1780). Boot, "Salaries and Career Earnings"; *idem*, "Real Incomes of the British Middle Class, 1760–1850: The Experience of the East India Company", *Economic History Review* 52 (1999), pp. 636–668; John Brewer, *The Sinews of Power: War, Money and the English State 1688–1783* (Cambridge, MA, 1990), pp. 80, 108–112; *idem*, "Servants of the Public"; H.W. Robinson, "The Administrative Staff of the Royal Society 1663–1861", *Notes and Records of the Royal Society of London*, 4 (1946), pp. 193–205; Henry Horwitz, "Record-Keepers in the Court of Chancery and Their 'Record' of Accomplishment in the Seventeenth and Eighteenth Centuries", *Historical Research*, 70, no. 171 (1997), pp. 34–51; P.G.M. Dickson, *The Sun Insurance Office 1710–1960* (London, 1960), pp. 32–61; Rolf Engelsing, "Die wirtschaftliche und soziale Differenzierung der deutschen kaufmännischen Angestellten in In- und Ausland 1690–1900", in *Zur Sozialgeschichte deutscher Mittel- und Unterschichten* (Göttingen, 1978), pp. 55–111.

42. One example for many: *Teutsche Sekretariat-Kunst [...] herausgegeben von dem Spaten*, 4 parts in 2 vols (Jena, 1681), part 1, p. 7. This book of instructions for secretaries went into four editions, the last published in 1726.

carry out the scientific investigations and publishing activities which would qualify him for later posts at the Mint and as Astronomer Royal.<sup>43</sup>

The formal disciplines imposed on workers generally reflect the absence of a fixed division of labour, rather than being obviously designed to enforce one. One discipline common to all of these occupations was discretion; it was common for men with administrative responsibilities in public service to be formally sworn to secrecy, and this was also the practice in eighteenth-century German pension funds. Dies’s promise to defend the fund from harm implied that he would not reveal vital information. Secrecy, of course, protected the employer (as well as the customers to whose private circumstances a worker might be privy). At the same time, the expectation of confidentiality was a natural concomitant of the understanding that workers of this kind were more than simply operatives, and that the quality of their contribution to the enterprise depended on their understanding of its internal operations. Control of their own public utterance was part of the price they paid in turn for the prospect of promotion. Similarly, employers’ exhortations to method and order implied a continuing degree of individual discretion in the management of tasks. In Dies’s case, the stipulation of times for attendance in the office related directly and solely to his responsibilities for meeting the public. Contemporary instructions for merchants’ clerks were firmer about attendance, but describe relatively informal systems of time-keeping associated with an expectation of collegiality and work-sharing among employees. One exception here is the work of British excise officers who, working in the field without direct supervision, were subject to an elaborate regime of self-accounting. This regime can be seen as a function, among other things, of the Excise’s character as a machine for generating information – both knowledge directly relevant to the raising of public finance and, increasingly, statistical data for general administrative purposes. At the same time, (by John Brewer’s account) these officers successfully resisted seeing themselves as “cogs”, and indeed the fact that much depended on their personal responsibility and their skill and inventiveness in the application of technical knowledge demanded that discipline be balanced with leeway.<sup>44</sup>

Excise officers shared with Dies a relatively unusual feature of his terms of employment, namely the ban on supplementary sources of income. In other respects, the financial arrangements on which Dies’s employment was grounded were characteristic of middle-class employment more generally. The *Caution*, or surety, was both a marker and an enforcer of one’s position in the society outside of the workplace. Since it was normally a sum exceeding the actual assets of the employee, raising a

43. Robinson, “Administrative Staff”, pp. 195–196.

44. Brewer, “Servants of the Public”, p. 146.

surety depended on the his being able to find fellow-citizens who would in turn act as guarantors; it was thus a material guarantee of the employee's probity and a test of his standing in the community, and at the same time served to reinforce his dependence on local networks of obligation. Johann Christoph Eisendecker, who acted as guarantor for Dies's Caution, would be the next man to be appointed to a position of responsibility in the Calenberg, and his standing surety for Dies probably marked the beginning of a tacit "expectancy" on his part. Whatever an individual's qualification, formal and informal arrangements such as expectancy and patronage remained key steps in a career in public service or administration.<sup>45</sup> In terms of systems of emolument, though, Dies's situation seems to signal something relatively new. The supplementing of nominal salaries through fees (from the public), perquisites or payments in kind, piece-rates such as page-rates for copyists and clerks, and cash gratuities for supplementary services was standard practice in all nonmanual occupations in the eighteenth century, including in all areas of public service. The British Excise pioneered fixed salaries as early as the seventeenth century, but in other occupations these began to be introduced only in the last third of the century, in both Britain and the German lands. In the German context, the introduction of regular salaries is generally associated with moves towards the regularization of public service in a set of legal categories (*Beamtenrecht*), which was beginning in Prussia in the late eighteenth century, but took off effectively after 1800 under the influence of the Napoleonic occupation. As a set of privileges and a marker of status, *Beamtenrecht* was something that German employees in the private sector would aspire to over the succeeding century and a half. But the implications of this regularization were ambivalent. In Dies's case, the ban on outside earnings represented an acknowledgement of the worker's key function as a handler of both money and information, and the time and mental independence that these functions demanded. It promised to free them from the efforts involved in piecing together a decent income. At the same time, it made them entirely dependent on their employers. This could have material disadvantages. Where (as in the German lands) there were no fixed salary scales and no formal arrangements for adjustment, real incomes became more sensitive to the vagaries of price and currency inflation (both endemic in the 1770s). Moreover, in Dies's case no arrangement had been made by which his income would rise with the workload. As the expanding workload led to a crisis in Dies's circumstances, the tenuousness of the security provided by a guaranteed salary would become clear.

45. Cf. K. Maletke (ed.), *Ämterkäufllichkeit. Aspekte sozialer Mobilität im europäischen Vergleich* (Berlin, 1980).

THE DEMANDS OF THE JOB I: PUBLICITY, COMPETITION,  
AND INFORMATION CONTROL

The catalogue of Dies's accounting duties set out above suggests that he had a lot to do, but both the volume of work and the stress associated with it were given a particular character by the way in which they interacted with a changing information regime. The growth of widows' funds was characterized by competition at two levels: the institutions themselves were in competition with one another for subscribers (as well as sometimes for licenses or official patronage), and the men who devoted themselves to devising schemes and systems of calculation for their operation – whether as free-lancers or in the pay of the funds – were in competition for both prestige and the prospect of being paid for their advice. The injunction on Dies to defend the interests of the fund meant that the keeping of secrets had to be balanced with the judicious release of information, in the form of public relations. As early as 1766 Dies was called on to defend the fund. When the Göttingen City Treasurer, Johann Augustin Kritter, circulated a manuscript claiming that the new plan dangerously underestimated the future pensions commitment, it was Dies who drafted two detailed refutations for the attention of the Committee. These were documents covering forty-three pages, in which Dies (like Kritter) drew on published mortality tables and speculation about the remarriage prospects of widows to project the maximum number of widows that might have to be supported by the fund.<sup>46</sup> Once the fund was up and running, he would be engaged in a more or less continuous interface with the public and with "experts" who continued to challenge the Calenberg's claims to stability, warding off and responding to publicly expressed doubts in print. The regular *Avertissements* were designed to instigate customer trust as much through the show of transparency and statistical expertise as through any evidence of solidity contained in the figures themselves. In their production, Dies's role was behind the scenes. But Dies also risked his own and the Calenberg's reputation by defending his employers in print. Any work of information or argument launched in the press could expect a response not only from the competitors themselves but also from the public.

In the case of the Calenberg, the tendency of publicity to avenge itself on the people who produced it is well illustrated by the press and pamphlet war around the question of how stable the fund was, which brought to public attention the debate that had been going on in private correspondence since the fund was first proposed. In late 1768, a short piece entitled "Thoughts about the Calenberg Widows' Fund" ran over two weekly

46. "Bemerkungen über die von Herr Kritter, wider die von Sr. Königl. Majestät von Großbritannien allergnädigst bestätigte Calenbergische Witwencasse, eingesandte Rechnung, nebst angelegter Gegenrechnung" (22 February 1767), and "Noch ein paar Anmerkungen gegen Herr Kritter" (12 March 1767), HStAHann, Hann. 93, vol. 3706, pp. 182–200, 215–218.

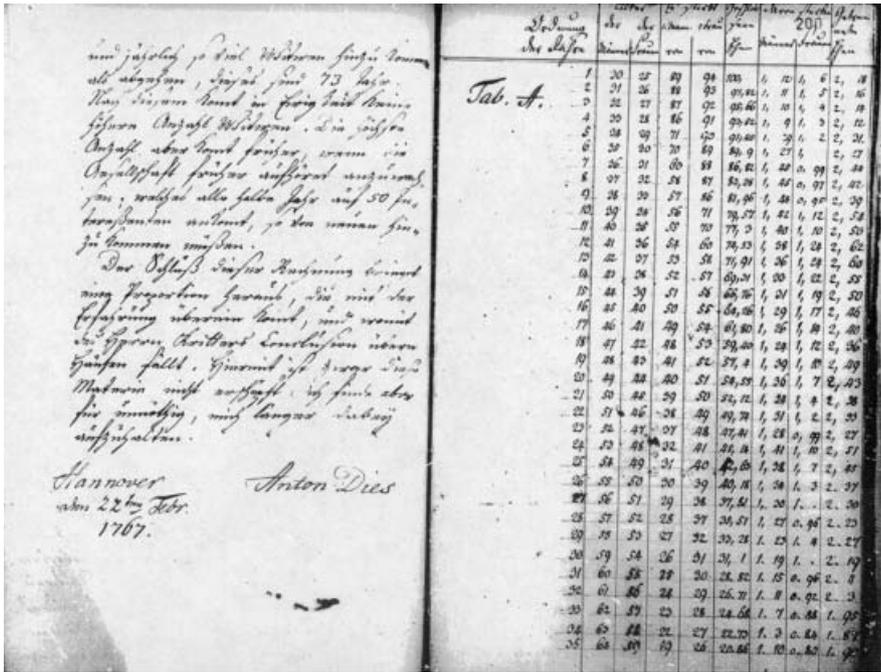


Figure 3. Page 22 of Anton Dies’s manuscript response to Ritter, and the beginning of a tabular appendix. The table traces the mortality of a cohort of married couples, in order to establish the long-term relationship of the number of widows to paying subscribers in a widows’ fund. *Niedersächsisches Hauptstaatsarchiv Hannover. Reproduced with permission.*

issues of the *Göttingische Gelehrte Beyträge*. The author was (or purported to be) a subscriber to the fund, and began by setting out the considerations that had moved him to make a financial sacrifice to buy a pension for his wife. He had, he wrote, not bothered to make a detailed analysis of the fund’s operation himself; relying on “the honesty and skill” of its founders and the “happy success of other public institutions in which I believed them to have been involved”, he had been confident of its soundness – “until yesterday evening, when I read issue 31 of the *Göttingische Gelehrte Beyträge*, and fell into a doubt which destroyed my ease of mind”. He was referring to an earlier article, itself cast as a commentary by a Calenberg subscriber, which enumerated in detail the statistical claims of the Calenberg founders and their gadfly, Ritter.<sup>47</sup> This

47. “Gedanken über die Calenbergsche Witwen-Verpflegungs-Gesellschaft”, *Göttingische Gelehrte Beyträge*, 1768, nos 37 and 38 (17 and 24 December), cols 464–469; “Unvorgreifliche Gedanken über das berühmte Calenbergsche Institut [sic] einer allgemeinen Witwenverpflegungsgesellschaft”, *Göttingische Gelehrte Beyträge*, 1768, no. 31 (5 November), cols 354–369. A similar ‘reader’s letter’, directed this time at Ritter and citing Dies’s counter-attack: “Disconto mit Hrn Camerarius Kitters Conto-Courant von der Bremischen Witwen-

was no lightning exchange; seven weeks elapsed between the publication of the two articles. But their tone conveys a sense of immediacy of reception and response, of being in the middle of a constantly flowing stream of data. The original piece had been published not only in Göttingen’s learned weekly but in intelligencers in Braunschweig and Hamburg, where four well-established widows’ funds were waiting to accommodate any subscribers who lost faith in the Calenberg; this provoked von Wüllen himself into an irritable defence of his fund.<sup>48</sup> Generally, though, it fell to Dies to channel and harness the stream of information, and during 1768 and 1769 he engaged in an exchange of press articles and pamphlets with Ritter, in which he proved himself the more vitriolic polemicist, if not unequivocally the better statistician.<sup>49</sup>

#### THE DEMANDS OF THE JOB 2: THE VOLUME OF DOCUMENTATION

While the information management aspect of pension-fund work constituted a source of emotional and moral pressure in itself, the generating of public-relations material added to a volume of routine internal documentation that expanded as the enterprise grew. It was the size of the workload that Dies and his successors in the Calenberg complained about. A progress report (apparently unsolicited) to von Wüllen dated 7 October 1767 “in the evening” shows Dies hard at work justifying the confidence placed in him, though still with a relatively leisurely and varied routine. He reports (in tabular form) on the new subscribers he has registered and on those who have died or resigned, with a commentary on the consequences for the fund’s current and future income. He asks that the Committee consider a question of principle that has occurred to him, for “as I work all sorts of fancies [*Grillen*] come into my head”. He comments on news about the royal family, reports on the problems he still faces with working out tables of *Simpla*, interrupts to report that an agent has “just sent me three new young subscribers” and comments “the flow of documents is increasing

Pflegeschaft”, *Hannoversches Magazin*, 1768, no. 99 (9 December), cols 1569–1583 [= whole number].

48. v. W., “Ueber die Gedanken, so das Calenbergische Institutum einer allgemeinen Wittwenverpflegungsgesellschaft betreffen”, *Hannoversches Magazin*, 1769, no. 22 (17 March), cols 337–351.

49. [A. Dies], “Beweis, dass alle getaufte Kinder in Paris von solchen Ehefrauen geboren werden, die keine Männer haben, nach Süssmilchischen Grundsätzen geführt”, *Hannoversches Magazin*, 1768, no. 1 (7 October), cols 1281–1296 [= whole number]. Cf. A. Dies, *Briefe an den Herrn Senator und Cämmerer Ritter in Göttingen, die Grundsätze von Wittwencassen betreffend* (Frankfurt [etc.], 1769) (38 pp.); Johann Augustin Ritter, *Beweis, daß die Männer in den Wittwenverpflegungsgesellschaften über 135 Jahre alt werden, mit einem Schreiben an Herrn Dies* (Göttingen, 1769).

every day”.<sup>50</sup> In the following years, the sheer volume of clerical work – most of which was carried by Dies – grew steadily as a function of the fund’s success. By the summer of 1773 the fund had more than 2,900 married couples on its books and was paying pensions to 234 widows. At the same time the need for calculation, recalculation, and strategic planning became more urgent; 1773 was the first year in which the imbalance between spending on pensions and contributions income placed before the Committee the strategic decision of whether to raise the price of the *Simplum* to an unpopular level or call on the *Landschaft* for subsidy. In July, it was agreed that Dies needed help. Johann Christoph Eisendecker was appointed with the title of cashier to assist Dies, particularly in the administration of contributions. In an arrangement entirely characteristic for the period, Eisendecker was to be paid a salary of 100 Rtl, half of which was to come out of Dies’s salary. Moreover, Eisendecker undertook to find 675 Rtl to make up a deficit in Dies’s accounts, with the right to claim reimbursement in instalments out of Dies’s salary; in return Eisendecker was promised that he would take over the post of Registrar when Dies died or retired.<sup>51</sup>

Dies was explicitly enjoined when he was hired to be aware that his accounts might be inspected at any time, and so to keep his records “in such an order that the [information] required is immediately apparent”. In December 1774, it became apparent that he had failed to do so, and indeed that he was still unable to keep up with the pace of the job. It emerged that he had accepted 650 Rtl worth of deposits from subscribers in a private capacity but had failed to pay them into the fund. The Chairman of the Treasury Committee was uncertain whether this was an example of embezzlement or simply an oversight; in any case it represented a breach of the rules, and Dies submitted his resignation. The letter of resignation made no direct mention of the actual occasion of its writing, but its wording suggests that he had indeed diverted the deposit money to other uses. He was at pains to explain that he simply could not keep up with the six-monthly reporting cycle, and added that there was no way to make up work which had fallen behind except “with outside assistance” – which would have had to be financed out of his own pocket. The letter as a whole, which climaxes with the dramatic announcement of Dies’s intention to seek his fortune in foreign parts, sets out vividly the impact that the spiralling demands of the job had had on somebody who had invested identity and reputation in the business of information management. Of the moral consequences of his situation, he wrote: “I could not bear it if the institute’s documentation under so many headings could not be effectively completed under my responsibility [*unter meinen Händen*], leaving the

50. Dies to von Wüllen, 7 October 1767, HtAHann, Dep. 7B, vol. 326I, pp. 86–87.

51. Crown Office to Landschaft, 8 July 1773, HStAHann, Hann. 93, vol. 3707, p. 17; Eisendecker to Treasury Committee, 9 January 1783, HStAHann, Hann. 93, vol. 3708, pp. 262–265.

blame to fall on me after my death.” The letter opened with an account of “frequent embarrassments [...] worries and strife [which] on several occasions have led to illness”; in particular, Dies complained of a paralysis of the right arm which had dogged him for nearly a year and made work impossible for days and weeks at a time.<sup>52</sup>

Dies’s only request of his former employers was that a pension of 100 Rtl be provided for his wife, to assist her with the care of their children. The negotiations around this question underline the ambivalence of Dies’s position as a key worker in an information-sensitive enterprise. It took the authorities almost two years to make up their minds. When Dies contacted the Treasury Committee in November 1775 to renew his request, he reported that he had been without any source of income since his resignation except what he could get by selling his furniture, and he had now run out of things to sell. Clearly, his salary from the Calenberg had not been sufficient to allow for savings. Moreover, he pointed out, as a result of eight years’ work for the Calenberg he had “lost connection with the best houses in Hanover”; the exclusive focus on a demanding job which required that he hold himself aloof from his wealthy and influential neighbours had robbed him of opportunities for networking and patronage. And he still could not do much with his arm. He nevertheless expressed a desire to be re-employed in widows’ fund work on some basis or other. In fact he had done work for the Committee in the preceding months, some of which had been paid for, and his completion of a particularly impressive exercise of calculation (comparing the Calenberg with the newly founded Berlin widows’ fund) prompted the Treasury Committee in July 1776 to renew its original recommendation to the Crown Office that the pension be granted. The reason for their original recommendation was that Dies was privy to inside knowledge about the operation of the Calenberg, and that if he were not tied to the kingdom (*vinculiert*) he might set up a competing fund somewhere else. By 1776 it was clear that he did not have any serious plans to emigrate, but also that his services (and loyalty) were still worth retaining on a consultancy basis. The Crown Office remained unconvinced about the security issue, but agreed that the family should not be allowed to fall into destitution. While Dies continued to do occasional work for the Calenberg, his wife received an annual stipend of 100 Rtl for the rest of her life.<sup>53</sup>

A similar set of conditions faced Johann Christoph Eisendecker when he succeeded Dies as Registrator. His duties continued to include the work of cashier, but this was not reflected in his salary, which was fixed at 500 Rtl.

52. Christoph Chapuzeau, Abbot of Loccum to Crown Office, 14 December 1774 and attached letter of Dies to Treasury Committee, 6 December 1774, HStAHann, Hann. 93, vol. 3707, pp. 95–99.

53. Correspondence between the Treasury Committee and the Crown Office, December 1774 and July 1776, HStAHann, Hann. 93, vol. 3707, pp. 100–103, 189–192.

Like Dies's salary, Eisendecker's was now subject to impositions; Dies's wife's pension came out of it. By the end of 1774, only 275 of the 675 Rtl which he had borrowed in order to lend it on to the Calenberg had been repaid, and the rest was still outstanding in 1783, when Frau Dies died and Eisendecker wrote to the Treasury Committee to ask that he now be allowed to enjoy his full salary.<sup>54</sup> Eisendecker took this occasion to comment on his own workload, which he estimated at more than three times what Dies's had been. This estimate was realistic. The parlous state of the Calenberg's accounts had become public in 1780, when the fund had over 3,700 married couples and more than 700 widows on its books. This led to a spiralling crisis which required not only rapid policy decisions based on constantly revised calculations, but also readiness to respond at any time to what had now become a maelstrom of data and polemic. Both subscribers and widows organized themselves and engaged in private and public protestations against plans to reduce pensions and raise contributions, competing groups of subscribers demanding and being granted the right to negotiate formally with the Treasury Committee about the terms on which the fund might be rescued. All of the leading mathematicians in the German lands were called on for advice, formally or informally, as were the law faculties of four universities. Argument and counter-argument circulated in manuscript correspondence, in printed pamphlets and handbills, and in the intelligencers and the scholarly press, alongside more reasoned (though not always disinterested) disputations about the uses of mortality tables and methods of calculation. The Treasury Committee was in more or less permanent session from the beginning of 1781 onwards, in minuted sessions and via memoranda criss-crossing the town and environs of Hanover at all hours of the day and night.

By 1783 the crisis was approaching a provisional resolution, in the form of a plan for a reformed fund which, when it was published in July, would leave nobody very happy. Justifying the reforms to subscribers, widows and the watching general public required that the officers of the Calenberg engage with all the arguments in circulation; the first *Avertissement* issued following the publication of the reform plan came with a twenty-four-page actuarial table.<sup>55</sup> In the process of reform, each new factor taken into account, each mechanism devised to improve the security of the enterprise, introduced a new set of arithmetical operations that needed to be carried out. In a period when compound interest, for example, was normally worked out at length by calculating a year at a time, this incurred a

54. Eisendecker to Treasury Committee, 9 January 1783, HStAHann, Hann. 93, vol. 3708, pp. 262–265.

55. 41stes *Avertissement, die Calenbergische Witwen-Verpflegungs-Gesellschaft betreffend*, 9 July 1783, HStAHann, Hann. 93, vol. 3705, pp. 81–92. The tables show the average duration of marriage for couples according to the respective ages of husband and wife.

multiplier effect on both the manual and the mental work required.<sup>56</sup> None of this could proceed without the effort of men like Eisendecker. The only change in Eisendecker’s conditions of service, however, had been an increase in the *Caution* he was liable for – not a compensation, but a further imposition. In his letter of January 1783 he explicitly reminded his employers “that I do not have the least side income, which could be expected in almost any [other] employment”, and concluded with the assertion that he could no longer support his family on what he was being paid. Like Dies, he also complained of the effect on his health of the growth in his workload.

A final exchange of correspondence from the Calenberg files suggests that Eisendecker was provided with some clerical assistance in the crisis, but also confirms the impression of a pathogenically expanding workload. In March 1784 one of the regular employees of the *Landschaft*, a clerk (*Kanzellist*) named Rath who had apparently been seconded to do some work for the Calenberg, wrote to the Treasury Committee to request that he be paid. When no action had been taken by the summer, his wife wrote again to present his case: The work he had done for the widows’ fund had been additional to his normal duties, she argued. Moreover, not only had he not been paid anything extra for “many years’ extraordinary work”, but he had also had to pay out of his own pocket for clerical assistance in order to keep up with the increased workload. In July the Committee proposed that he be made a discretionary grant, but Maria Rath was not satisfied, and reasserted her husband’s claim to formal and substantial acknowledgement of his efforts. Receiving no further response, she again took up the cudgels in December. At the centre of her pleas was the fact that her husband had since the spring been suffering from a mental disorder (*Gemüthskrankheit*). She found her husband’s condition “uncommonly oppressive”, and was renewing her husband’s petition

[...] because the burden is too much for me, and I cannot see any way I can continue to fulfil the many and heavy obligations for which my unfortunate husband’s regular income – already considerably reduced – is no longer sufficient, and meet the needs of myself and my three young children.

At the same time she reported that before her husband’s breakdown, she had dissuaded him from presenting his employers with a catalogue of all the documents he had prepared for the widows’ fund, urging him to

56. Dies amused himself in his retirement with trying to find an alternative method for calculating compound interest, in his case using a table; see [Anton] Dies, “Anatocismus inversus. Oder: Regul, Zinse auf Zinse auf eine verkehrte, jedoch auf die kürzeste und leichteste Art auszurechnen”, *Hamoverisches Magazin* 1781, no. 1, cols 167–170. Cf. Andrew Warwick’s comment on how the reception of mechanical computational aids by actuaries in the 1860s and 1870s exposed “the handwork in the actuary’s craft”; Warwick, “Laboratory of Theory”, pp. 329–331.

continue working hard in order to reinforce his claim to compensation. In January 1785 the Committee members relented and agreed to grant the “mad clerk” a gift of four Pistoles, the equivalent of 11 Rtl. It was minuted that this should not constitute a precedent.<sup>57</sup>

#### SERVICE OR LABOUR? THE HAZARDS OF INFORMATION WORK

A comparison of Rath’s gratuity with the fee of 40 Rtl that Dies was paid in 1782 for his free-lance calculation work for the Calenberg suggests the differentials in earning-power associated with different degrees of access to privileged information and skill in its management (or calculation).<sup>58</sup> But while none of these men was a master, all were more than operatives. The pattern of their work, the skills it required and the schooling it presupposed, the respect to which they aspired and which was accorded them, all bear the familiar marks of middle-class employment. Even the financial insecurity they suffered and their dependence on patronage, mutual arrangements and shifts were not different in kind from the terms on which officers of civil and municipal administration were employed in the German states in the century before the legal regularization of the civil service. In what sense can we speak of labour in connection with this group of workers? Eisendecker began his letter of 1783 with a formula that was also a statement about the nature of his work: “Your honours most graciously and indulgently allow me to set down for a few moments the pen which my service bids me wield and occupy myself with the drafting of the present memorial.” Eisendecker used the term “service” (*Dienst*) self-consciously here, and meant by it those things which distinguished the work that he (and Dies and Rath and others like them) did from that of the common labourer or tradesman. But at the same time the formula visualizes his work as (literally) manual labour, in the same way as Dies’s use of the phrase “under my hand” (*unter meinen Händen*) draws attention to the physical process by which the “documentation under so many different heads” was produced. Maria Rath, similarly, referred to the copyists her husband had had to employ as “helpful hands”. Eisendecker’s formulation foregrounds the paradox in all this correspondence: his letter was no less a product of the pen than the hundreds of pages of tables and memoranda and correspondence that constituted his “service”. Similarly, Rath could only effect his claim to compensation for his services as a scribe by “threatening” to do more writing, drawing up a catalogue of all the documentation he had produced for the Calenberg. But Eisendecker’s

57. Correspondence between Maria Rath and Treasury Committee and minutes of meetings of the Treasury Committee, March 1784–January 1785, HStAHann, Dep. 7B, vol. 371, pp. 293–298.

58. Minutes of Treasury Committee meeting, 15 October 1782, HStAHann, Dep. 7B, vol. 371, p. 147.

imagery bespeaks an awareness of the distinction between work done at the behest of others and that done “on one’s own account”, and thus helps us to see these middle-class occupations as labour.

The self-representations of these men also reveal that it was not only their physical powers and skill – their stamina and ability to write – that they placed at the disposal of their employers. The work they did required skills of intellect and argument in which considerable self-esteem was invested, since they were responsible not only for communicating but also for generating and managing information; accuracy was at a premium, the products of their labour subject to scrutiny by critical eyes as well as to the test of experience, and getting it wrong could cost them their employment and their reputations. The duty of confidentiality associated with handling sensitive data laid a permanent constraint on their speech and action. It is not surprising, then, that while only Rath actually suffered a breakdown, all the correspondence makes reference to states of mind, to mental as well as physical health. The German terms which Dies used to convey his “embarrassments, worry and strife” – *Bedrängnisse, Sorgen, Gram* – implied constraint and mental conflict. Eisendecker characterized the restraint on his salary and his unrecompensed subsidy to Dies as things that had “uncommonly discouraged” him over the years.

Dies’s paralysis of the right arm and Rath’s nervous breakdown reveal the combination of physical, mental, and emotional demands made on this generation of clerical workers in the acute form of occupational disease. The medical literature on occupational hazards which circulated throughout Europe provides one kind of measure of the extent to which activity of this kind was identified by contemporaries as work. While the conditions reported by Dies and Rath find an echo in this literature from an early date, the perception of clerical workers as having a distinct occupational profile defined by a labour process was uneven before the nineteenth century. In the 1713 supplement to his *De morbis artificum* of 1700, the first modern writer on occupational diseases, Bernardino Ramazzini, devoted a section to the diseases of scribes and secretaries – in spite of his view that the introduction of printing must have reduced the demand for their services. (The first edition included a section on the diseases of academics and scholars, but his publisher clearly thought something more specific was needed.) He described the pathogenic features of these occupations as their sedentary character,<sup>59</sup> the necessity of constantly carrying out the same motion with the writing hand, and the need for mental concentration “lest their writing be spoilt by errors or they cause their employers loss through

59. In spite of evidence that writing desks at which the writer stood were in use in the early modern period, all the eighteenth-century literature on clerical workers I have seen presumes that they worked sitting down. See also Winfried Hansmann, *Kontor und Kaufmann in alter Zeit* (Düsseldorf, 1962), pp. 78–85 (with contemporary images).

errors of arithmetic". As an example of the physical hazards of the job, Ramazzini provided a description of a case of paralysis of the hand and arm which proved incurable. To the mental strains arising from the need for accuracy, Ramazzini added the stress suffered by those men who were secretaries to "princes", and had to contend with the inscrutability of the great and the ambiguities of diplomatic discourse.<sup>60</sup> The editions of Ramazzini that circulated in translation later in the century, and works on occupational disease that continued to draw heavily on his work, did not all include the section on scribes and secretaries. A 1746 English edition entirely deleted the references to courtly employment (not surprisingly), and telescoped the sources of mental stress. A sentence inserted by the translator collapsed clerical work back into a broad category of intellectual activity: "These misfortunes are principally incident to Philosophers, Arithmeticians, Merchants Clerks, and Secretaries, whose minds are often perplex'd with a Multitude of Letters, and the variety of the Subjects on which they write." Similarly Buchan's popular *Domestic Medicine* contained a section on the afflictions of "the studious", but had nothing to say about those who wrote for pay. The supplement was not included in the 1718 German translation of Ramazzini, and the editor of a 1780 German edition was more interested in the diseases of manual workers like the weavers and stocking-knitters who attended his practice.<sup>61</sup>

The recognition of clerical work as a form of labour in terms of a specific combination of muscular and neuropsychological pathologies occurred only in the 1830s. The editions of Ramazzini published in the 1820s displayed a new interest in clerical workers, updating Ramazzini's categories to include "notaries, lawyers, and employees in public administration" as well as "secretaries, clerks, commercial employees,

60. Bernardino Ramazzini, *Diatribae de morbis artificum supplementum* (1713), in B. Ramazzini, *Opera Medica*, 2 vols (Leipzig, 1828), p. 192. It has been remarked that the Supplement is more circumstantial in its treatment of specific trades than the first edition, and in particular lacks the element of social satire that characterizes the treatment of groups like academics among "artificers"; Stefan Goldmann, "Zur Ständesatire in Bernardino Ramazzinis 'De Morbis Artificum Diatriba'", *Sudhoffs Archiv*, 74 (1990), pp. 1–21; Axel Gils, *Bernardino Ramazzini (1633–1714). Leben und Werk, unter besonderer Berücksichtigung der Schrift "Über die Krankheiten der Künstler und Handwerker"* (Göttingen, 1994), pp. 83–84.

61. *A Dissertation on Endemial Diseases, or those Disorders which Arise from Particular Climates, Situations and Methods of Living; together with a Treatise on the Diseases of Tradesmen* (London, 1746), pp. 400–401; William Buchan, *Domestic Medicine: Or a Treatise on the Prevention and Cure of Diseases*, 6th edn (London, 1779), pp. 57–65; *Bernhardi Ramazzini Untersuchung von denen Kranckheiten der Künstler und Handwerker* (Leipzig, 1718); *Bernhard Ramazzini's [...] Abhandlung von den Krankheiten der Künstler und Handwerker, neu bearbeitet und vermehret von Dr Johann Christian Gottlieb Ackermann* (Stendal, 1780). Cf. *Essai sur les maladies des artisans, traduit du Latin de Ramazzini, avec des notes et des additions, par M. de Fourcroy* (Paris, 1777).

scribes and copyists”.<sup>62</sup> But in the 1830s writers began to provide their own specific and circumstantial accounts of the conditions under which clerks, bookkeepers and accountants worked.<sup>63</sup> At the same time, physicians began to observe for themselves and to report on examples of cramp and paralysis of the hand and arm of the kind described by Ramazzini (and which Dies seems to have suffered). This syndrome now entered into the English medical literature under the name “scrivener’s palsy”, a phrase which firmly attached the disease to the occupation, and later simply “writer’s cramp” (in German *Schreibekrampf*). Charles Bell is credited with the first published report on the syndrome, in a brief note of 1830. It seems clear, though, that its “discovery” occurred more or less simultaneously in Britain, France, and Germany.<sup>64</sup> While some observers regarded the introduction of steel-nib pens as a predisposing factor, the common aetiology was identified in the volume and intensity of the work, and also in its alienated character; academics and authors did not present with these symptoms. By the same token, cramp seemed in many cases to include an element of psychic resistance to the specific task, with the affected limb still being usable for leisure activities. By the 1890s, similar symptoms were being noted in telegraphers, the latest generation of information workers to be affected by changes in the conditions of work – this time unequivocally related to new communication technologies. But as late as 1897 Herbert Spencer would invoke the image of the clerk “who, daily writing for hours after his fingers are painfully cramped, is attacked with ‘scrivener’s palsy’, and, unable to write at all, sinks with aged parents into poverty” as a universally recognisable example of the perils of “inadequate egoism”.<sup>65</sup>

62. Philippe Patissier, *Traité des maladies des artisans et de celles qui résultent de diverses professions, d’après Ramazzini* (Paris, 1822); Julius H.G. Schlegel, *Die Krankheiten der Künstler und Handwerker und die Mittel sich von denselben zu schützen* (Ilmenau, 1823) (an annotated translation of Patissier’s edition).

63. E.g. C. Turner Thackrah, *The Effects of Arts, Trades and Professions and of Civic States and Habits of Living on Health and Longevity*, 2nd edn (London [etc.], 1832), p. 176.

64. Charles Bell, *The Nervous System of the Human Body* (London, 1844), pp. 429f (1st edn 1830); cf. *Karl Bell’s physiologische und pathologische Untersuchungen des Nervensystems*. Moritz Heinrich Romberg (transl.) (Berlin, 1832), p. 362. The earliest German account, by Brück, dates from 1831, and a continuous and intensive exchange of views in the German medical press set in in 1835; A.C.L. Halfort, *Entstehung, Verlauf und Behandlung der Krankheiten der Künstler und Gewerbetreibenden* (Berlin, 1845), pp. 533–541; K.E. Hasse, *Handbuch der speciellen Pathologie und Therapie*. 4. Band, 1. Abteilung: *Krankheiten des Nervenapparates* (Erlangen, 1855), pp. 142–148; communications by Heyfelder, Albers, and Siebold in *Medicinische Zeitung von dem Verein für Heilkunde in Preussen*, 4 (1835), pp. 5, 37–38, 82–83. For surveys of an extremely complex literature, see J. Quintner, “The RSI Syndrome in Historical Perspective”, *International Disability Studies*, 13 (1991), pp. 99–104; Allard E. Dembe, “The Changing Nature of Office Work: Effects on Repetitive Strain Injury”, *Occupational Medicine: State of the Art Reviews*, 14 (1999), pp. 61–72.

65. Herbert Spencer, *The Principles of Ethics* (London, 1892–1893), p. 195.

## CONCLUSION

Having noted that the expansion of clerical work in information management predates its “discovery”, what can we conclude? Nineteenth-century observers rarely failed to note that writer’s cramp was an affliction mainly of men – because the work that brought it on was men’s work. Academic and medical interest has recently been focused on nineteenth-century discussions in the light of our own “epidemic” of repetitive strain injury – a typical occupational disease of those who work with information technology, and now mainly women.<sup>66</sup> The story of information (clerical and communications) work since the late nineteenth century is sometimes written as a story of proletarianization, and at the same time a story of the way in which a gendered division of labour reproduces itself with each successive technological advance. By contrast, the eighteenth century seems to be period of relatively little change, but (granted the paucity of the data) it seems possible to identify not only shifts in the volume and character of information-related work but also emerging particularities in the conditions of service that attached to it. A close look at those features that were not new or particular to information work can also make us attentive to the areas of change to come which implied increasing specialization and division of labour in the work of men like Dies. The move towards fixed and regular salaries in the late eighteenth century has already been noted. At a quite different level, advice literature for men of the clerical classes in Germany seems to have undergone a degree of specialization at the same time, with compendia that covered everything from morality and personal habits to the drafting of wills replaced by distinct genres, one offering general advice on conduct and manners, and another guidance on current problems and practices in specific occupations.<sup>67</sup> This parallels the beginnings of formal schooling in commercial and low-level administrative skills as a form of qualification for men without access to university training.<sup>68</sup> The British case suggests

66. Thus Leonard F. Peltier’s comment in his introduction to a reprint of Samuel Solly’s 1864 lecture “On Scrivener’s Palsy, or the Paralysis of Writers”: “Solly’s description of a repetitive strain injury in male secretaries in 1864 has many similarities with the types of repetitive strain injuries seen in female secretaries laboring over their computer keyboards 130 years later”; *Clinical Orthopaedics and Related Research*, 352 (1998), pp. 4–9.

67. The classic examples of the former are Carl Friedrich Bahrdt, *Handbuch der Moral für den Bürgerstand* (Halle, 1789); Adolf von Knigge, *Über den Umgang mit Menschen* (Hanover, 1788). An example of the latter: *Magazin gemeinnütziger Aufsätze für Wirtembergische Schreiber* (Stuttgart, 1797). A promising project analysing the surviving corpus of early modern business handbooks has yet to cover the eighteenth century: Jochen Hoock, Pierre Jeannin *et al.* (eds), *Ars Mercatoria. Handbücher und Traktate für den Gebrauch des Kaufmanns, 1470–1820*, 6 vols projected, 3 published to date (Paderborn, 1991–2001).

68. See the texts reprinted in Klaus Friedrich Pott (ed.), *Über kaufmännische Erziehung* (Rinteln, 1977).

that the early nineteenth century would witness a complex dialectic of professionalization and tendential (though incomplete) proletarianization as different aspects of what in Dies’s case had been a single workload – clerical, computational, “scientific”, and public relations work – began to separate out. In the work of actuaries (which is more or less what Dies and Eisendecker were), the tension between science and commerce became acute and sought resolution in a process of professionalization.<sup>69</sup> The demand for accuracy which grew with the possibilities of achieving a universal standard through the use of technical instruments progressively lessened the scope for discretion on the part of civil servants like excise officers, subjecting their work to new kinds and degrees of discipline.<sup>70</sup> It was not any direct application of new mechanical technologies, though, that made for the “discovery” of clerical work as a problem area in the 1830s; mechanical calculators and typewriters in their time were introduced as solutions to the stresses of low-tech clerical work. But neither can that discovery be seen as a simple reflex of a sudden increase in numbers.<sup>71</sup> It seems rather to reflect a dialectic between the presence of an occupational group which had been growing for a century or more, and an awareness of the possibilities of both mechanical and managerial “solutions”, which depended on the experience of fully-realized machine production and industrial forms of labour discipline.

69. Timothy W. Alborn, “A Calculating Profession: Victorian Actuaries Among the Statisticians”, *Science in Context*, 7 (1994), pp. 433–468; Theodore M. Porter, “Precision and Trust: Early Victorian Actuaries and the Politics of Calculation”, in Wise (ed.), *The Values of Precision*, pp. 173–197.

70. William J. Ashworth, “‘Between the Trader and the Public’: British Alcohol Standards and the Proof of Good Governance”, *Technology and Culture*, 42 (2001), pp. 27–50.

71. Gregory Anderson dates an acceleration of growth the number of clerical workers in Britain only from the 1850s: *Victorian Clerks* (Manchester, 1976), p. 10.