The scholarly self under threat: language of vice in British scholarship (1870-1910)

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Virtues and vices in academic memory culture

Introduction

When he was 56 years old, Clement Le Neve Foster (1841-1904), Professor of Mining at the Royal School of Mines, narrowly escaped death in a mining accident. He and his crew descended a damaged mining-shaft to investigate the causes of an earlier fire in the Snæfell lead mine on the Isle of Man, in which several miners had found their death. The cage that carried him down, however, got stuck, and barred the way back to the surface. Since an underground fire had raged in the mines just before, the tunnels were filled with carbon monoxide. A dangerous situation: being stuck in the tunnels meant being slowly poisoned by the atmosphere. He was rescued just in time, unconscious, but holding on to a pocket-book, because he, 'when escape seemed utterly hopeless, had the presence of mind to take out his pocket-book and make a series of entries as to his sensations, for the benefit of medical men and chemists after his death.'[1] Even in the face of death and with diminishing consciousness, Le Neve Foster acted scientifically and tried to benefit fellow scholars. His final act, for all he knew, was scientific. Luckily, Le Neve Foster was rescued just in time, but he never recovered from the accident and the 'cardiac injury sustained during the process of

1 J.W.J., 'Sir Clement Le Neve Foster. 1841-1904', *Proceedings of the Royal Society of London* 75 (1905) 371-377, 375.

gradual suffocation.'[2]

This anecdote of Le Neve Foster was told in his obituary in the *Proceedings of the Royal Society*. We do not know whether the episode in the mine actually took place and how 'scientifically' Le Neve Foster actually behaved during his dreadful ordeal: did he really clutch a pocketbook with a final contribution to science? Did he really think about science when he passed out? Such a fact-check of this source, however, is rather beside the point: we should not wonder whether this obituary of Le Neve Foster was accurate in its historical representation. It probably was not. We should instead ask why Le Neve Foster was remembered the way he was. What was the function of this anecdote? And what other information was transmitted in Le Neve Foster's obituary? What can this man's obituary tell us about the ideals of scientific selfhood around 1900?

A closer reading of the obituary in the *Proceedings of the Royal Society* shows that the story of the mine was not told to amuse readers or to provide factual information about his life, but that it was meant to communicate an image of Le Neve Foster's life as being extremely devoted to science. The depth of this devotion was illustrated by his actions in the mine: even in suffocation, Le Neve Foster thought about science.[3] In fact, the writer of Le Neve Foster's obituary literally cited the story of the mine to be 'striking evidence of his devotion to science.'[4] This devotion to science was further underlined by the writer's observation that Le Neve Foster struggled with his health until his death in 1904, but 'still devoted a large part of his time with undiminished zeal to the duties of his Chair at the Royal School of Mines.'[5] Le Neve Foster's successful scholarly life was made into an example: if you want to be a scholar, be like Sir Clement Le Neve Foster! Before turning to the significance of obituaries like Le Neve Foster's,

2 J.W.J., 'Sir Clement Le Neve Foster', 375.

3 This kind of self-sacrifice entailed a view of science as something that was worthy of sacrifice, as Rebecca Herzig has masterfully argued for late nineteenth-century American scientific self-sacrifice: Herzig, *Suffering For Science*.

4 J.W.J., 'Sir Clement Le Neve Foster', 375.

5 Ibid. 376.

let us first take a further look at the contours of the ideal exemplified by Le Neve Foster in academic memory culture.

In addition to his 'devotion to science', the obituaries published after his death also praised Le Neve Foster for other personal qualities: his 'hard work', his 'freshness and alertness', his 'unflagging energy' and his 'love of scientific research'.[6] Another obituary praised his laboriousness, his 'severity' as an administrator, and his faithfulness of service to the country.[7] Additional obituaries speak of Le Neve Foster's 'extreme courage' and 'devotion' to the scientific cause, as well as the 'charm of his personal character'.[8] In many cases, these character-traits were directly linked to Le Neve Foster's accomplishments: it was his 'severity' and 'stringency' as an administrator that led to a decline of death in mining accidents, it was his 'methodical habits' and his 'unflagging energy' as a teacher that led to his success in the Royal School of Mines, and it was his 'love of scientific research' that enabled him to pursue such a distinguished career.[9]

In other words, central to the idealised account of Le Neve Foster's life was both his devotion and his virtues of courage, energy and zeal. These virtues enabled Le Neve Foster to do the noteworthy things that he did. In communicating such an idealised image of Le Neve Foster's scientific life, obituaries effectively offered a template for other scholars. The function of anecdotes like the story of the mine was to show how abstract virtues were translated into actual practice.[10] If we would ask not only the question to *how* Le Neve Foster was remembered, but also *why* he was remembered the way he was, it is this template function that would come to the fore. Le

6 Ibid. 373-374.

7 'Sir Clement Le Neve Foster, F.R.S.', *Nature* (28 of April, 1904) 614.

8 Henry Trueman Wright Wood, 'Le Neve Foster, Clement Le Neve', *Journal of the Society of Arts* (29 April 1904) 42-43; 'Sir Clement Le Neve Foster, D.Sc., F.R.S.', *Geological Magazine* 1:6 (1904) 286-287.

9 J.W.J., 'Sir Clement Le Neve Foster', 374-376. For 'severity', see: 'Sir Clement Le Neve Foster, F.R.S.', *Nature*, 614.

10 For a discussion of the position of anecdotes in historiography, see: Lionel Gossman, 'Anecdote and History', *History and Theory* 42:2 (2003) 143-168.

Neve Foster's life was made into an example of what a good scholar should be: his obituaries offered scholars the raw materials on which to base their own lives.

The example of Le Neve Foster is by no means isolated: it was common practice in late Victorian and early Edwardian Britain to remember scholars in such an idealising way. Whenever a scholar died, academic colleagues wrote one or often multiple obituaries about the character of the deceased. Such obituaries were often rather lengthy (varying from one or two pages to fifty pages) and provided ample anecdotes of how such a virtuous character functioned in practice. Obituaries described the personal character of a scholar and inscribed him in the progress of science and civilisation as a whole. Scientific periodicals such as the *Proceedings of the Royal Society*, and the *Proceedings of the British Academy* avidly published obituaries of all their deceased members and more specialised periodicals such as the *English Historical Review* or the *Geographical Magazine* did the same for a more specialised audience. Obituaries and other genres of academic memory culture (celebratory speeches, centennial volumes, and so on) were instrumental in the establishment of coherent and recognisable ideals of scholarly selfhood.[11] They retold idealised lives and so offered templates for scholarly lives that could be appropriated and inhabited. A crucial ingredient in these sources was the language of virtue and vice.

It comes as no surprise that virtues and vices figure prominently in these obituaries. As I have suggested in the introduction, there are two answers to the question of why Victorians and Edwardians were so preoccupied with matters of vice. The first answer is that this language helped scholars to identify and neutralise the dangers that beset the pursuit of knowledge. The language of virtue and vice instructed and communicated ways of being a scholar: it kept learned men on the straight and narrow path to knowledge. The second answer is that virtue and vice were, at the same

11 For a broad overview of commemorative practices in science, see: Abir-Am and Elliott (eds.), 'Commemorative Practices in Science'.

time, contested categories. Scholars disagreed about what good science was and what the make-up of a learned man ought to be. The language of vice thus also helped to demarcate and police all kinds of boundaries between these ideals.

Historians have never systematically studied sources such as the Victorian and Edwardian scholarly obituaries, despite the enormous production of such texts between 1870 and 1910. Historians have, however, drawn attention to the functions of scholarly obituaries in other national contexts. A groundbreaking study of scientific obituaries has been made by Charles B. Paul, who studied the eighteenth-century éloges of the Paris Academy of Sciences, written by the secretaries of the academies. Paul shows how eulogies of deceased scientists were modelled on much older traditions of commemorating heroes.[12] By transforming this old literary form, the secretaries of the Paris Academy of Sciences were successful in constructing an image of scientists as moral heroes, essential for the functioning of the state. The secretaries identified the pursuit of science as the pursuit of virtue. Through this representation of scientists as moral heroes, the secretaries of the Academy carved out a space for science in the French state.[13]

Paul's work focuses specifically on the representation of science to society. *Eloges* are presented to be a means to an end: presenting science as a moral endeavour helped to strengthen scientific institutions and the social standing of scientists in eighteenth-century France. Obituaries, however, played a more complex role in the culture of science, as others have shown. Not only did obituaries (or eulogies) function as instruments of representation, but they were also used to fight out scientific debates and to reconfigure scientific ideals. Anna Echterhölter, writing on eighteenth and nineteenth-century German obituaries of *Naturwissenschäftler*, shows how obituaries often served as an arena in which differing conceptions of

12 Charles B. Paul, *Science and Immortality. The Eloges of the Paris Academy of Sciences (1699–1791)* (Berkeley: University of California Press, 1980).
13 Ibid.

science clashed. Through what Echterhölter calls 'genealogical practices' –emphasising certain aspects of a life while downplaying others, or presenting a scientist as a specific 'type'– writers of obituaries used the genre to communicate their own ideals of science.[14] Following Echterhölter, then obituaries also served as battlegrounds for differing conceptions of what a good scientist ought to be.

Jo Tollebeek has drawn attention to an additional function of academic memory culture in the nineteenth-century humanities in the Low Countries: community building. Through commemorative practices, including the writing of obituaries, exchanging of photographs and commemorative gatherings, scholars sought to strengthen disciplinary identities and foster a sense of community within a discipline.[15] Obituaries, then, were not only used to communicate a virtuous image of science to the outside world, as Paul has argued. They were at the same time grounds for community building and arenas for scientific debates. Herman Paul, finally, has argued that academic memory culture explicitly offered 'ways of engaging with models of virtue'.[16]

As for the nineteenth-century British context, especially (successive) *biographies* of scholars have received attention. Scholars like Patricia Fara, Richard Yeo and Rebekah Higgitt have drawn attention to the many biographies of a crucial figure like Newton, and have shown that the image of Newton changed according to the needs of the biographer and his conception of what good science was.[17] Biographies, this scholarship shows, could very well serve as battlegrounds for differing conceptions of science.[18] Obituaries, however, have received far less attention from

14 Echterhölter, *Schattengefechte*.
15 Jo Tollebeek, 'Commemorative Practices in the Humanities around 1900', *Advances in Historical Studies* 4 (2015) 216-231, 217-220.
16 Paul, 'The Virtues of a Good Historian in Early Imperial Germany', 704.
17 Yeo, 'Genius, Method and Morality'; Higgitt, *Recreating Newton*; and: Fara, *Newton: The Making of Genius*.
18 For biographies and the history of science, see also: Shortland and Yeo (eds.), *Telling Lives in Science*.

scholars, even though the Victorian age produced a massive number of them. A systematic analysis of the hundreds and hundreds of Victorian and Edwardian scientific obituaries has never been attempted: obituaries are usually referenced as a source of biographical information, but no scholar has engaged with them like Echterhölter or Paul did for the German and French contexts.

In addition to the lack of systematic attention for the wealth of Victorian and Edwardian obituaries, the existing work on obituaries pays scant attention to the interplay between notions of virtue and vice in these sources. As the example of Le Neve Foster already illustrates, the moral language of virtue permeates the late nineteenth-century British obituary. But what catalogues of virtues were displayed in these sources? And why were British scholars so preoccupied with their virtuous characters in the first place?

The following sections will argue that the virtues eulogised in scholarly obituaries should be seen in the light of their dangerous alternative: vices. Obituaries offered templates of virtuous scholarly lives in an elaborate effort to neutralise the threat that vice posed to ideals of scholarly selfhood. Catalogues of virtue were juxtaposed to the threats of vice, even in idealising sources like the Victorian obituary. As I have suggested earlier, the language of virtue and vice in Victorian and Edwardian scholarship was so omnipresent because scholars agreed that to pursue knowledge was to walk the narrow path of virtue and to resist all kinds of vices. Walking this path also entailed the identification of vices, as well as strategies for dealing with them. This chapter corroborates these points, and argues that 1) Victorians and Edwardians used academic memory culture to identify the dangers that threatened scholarly selves, and 2) offered two strategies for keeping these dangers at bay: a balanced constellation of virtues, and

the cultivation of a 'love of truth'.[19]

Corpus and method

To corroborate these two points, this chapter draws on an analysis of over 500 scholarly obituaries published roughly between 1870 and 1910. This corpus has not previously been analysed. It includes obituaries of well-known Victorians such as experimentalist Michael Faraday (1791-1867), mathematician Arthur Cayley (1821-1895) and historian Edward August Freeman (1823-1892), as well as obituaries of lesser-known figures such as naturalist Thomas Hincks (1818-1899) or botanist Daniel Hanbury (1825-1875). It includes people from all kinds of disciplines and different regions of British scholarship. My selection of these obituaries is primarily based on their subjects' membership of learned societies such as the Royal Society of London and the British Academy. Since its early years, the Royal Society of London honoured its deceased fellows with a mention during an anniversary meeting, and since at least the early nineteenth century the President of the Society spoke eulogising words on deceased fellows during his anniversary speech. From the mid-nineteenth century, 'Obituary notices of fellows deceased' were annually included in the *Proceedings of the Royal Society*.[20] These obituary notices make up a large part of my corpus of obituaries, because fellows of the Royal Society were drawn from a great variety of disciplines (geology, mathematics, physics, chemistry, botany, biology, engineering, and so on) and membership of the Royal Society meant that these persons were influential and representative of science

19 The point that virtues should not be seen in isolation but as parts of constellations of virtue has been made by Herman Paul repeatedly. For a balance of virtues and the concept of persona, see: Herman Paul, 'Virtue Language in Nineteenth-Century Orientalism'. I will return to the concepts of 'danger' and 'vice' in a later section.

20 For this practice, see: Emma Davidson, 'Obituaries through the ages', The Royal Society. The Repository, accessed 05-06-2020, https://blogs.royalsociety.org/history-of-science/2012/05/03/obituaries-through-the-ages/. For a history of the Royal Society in the nineteenth century, see: Marie Boas Hall, *All Scientists Now. The Royal Society in the Nineteenth Century* (Cambridge: Cambridge University Press, 1984).

in Victorian and Edwardian Britain. The Royal Society, however, did not frequently allow scholars from the humanities as fellows. To ameliorate this, I have also included obituaries from the *Proceedings of the British Academy* (founded in 1902) and obituaries published in journals such as the *English Historical Review* (founded in 1886). The main bulk of my corpus is thus drawn from these sources, and I have included some from more specialised periodicals like *Nature*, or the *Geological Magazine*, and other periodicals. Obituaries were generally written by fellow scholars, signed with initials or written anonymously. The length of an obituary varies from one or two pages to fifty pages or more.

It is hard to probe how precisely Victorians and Edwardians engaged with the role models that were offered in academic memory culture, but it is certain that these obituaries were read and reflected upon. One example will suffice as illustration. When John Tyndall died in 1893, his widow Louisa C. Tyndall, née Hamilton (1845-1940), and his good friend and colleague Edward Frankland collaborated on the writing of Tyndall's obituaries.[21] The response to these obituaries was overwhelming. Both Louisa and Edward received numerous letters from old colleagues, students and other scholars, thanking them for commemorating Tyndall. What is most intriguing, however, is that the correspondents engaged with the themes of character that were central to the obituary. The former Principal of Owens College Manchester, Joseph Greenwood (1821-1894), for example wrote to Frankland that the obituary in the *Proceedings* was 'the record of a noble life and of a character far too genuine and original to make it likely that many would be found ready to echo or accept all its

21 This process is intriguing in itself. Louisa and Edward corresponded frequently and shared memories and documents in the process. See: Letter from Louisa C. Tyndall to Edward Frankland, 24 February 1894 [EFP, JRL, 13/1245]; Letter from Louisa C. Tyndall to Edward Frankland, 27 April 1894 [EFP, JRL, 13/1235]; Letter from Louisa C. Tyndall to Edward Frankland, 4 June 1894 [EFP, JRL, 16/1722]; Letter from Louisa C. Tyndall to Edward Frankland, 10 June 1894 [EFP, JRL, 21/1946]; Letter from Louisa C. Tyndall to Edward Frankland, 3 November 1898 [EFP, JRL, 10/411].

conclusions in the provinces of Ethics or politics.'[22] Others responded with lines of verse or a short memory. To sum up: obituaries were read, and the lessons of character that they provided were reflected upon.[23]

In this large corpus of obituaries, I have found that Victorians and Edwardians were very much preoccupied with the dangers that beset the pursuit of knowledge. They did not just eulogise the virtues of the deceased, but juxtaposed these virtues to the vices and temptations that threatened a good scholarly life. In these scholarly obituaries, Victorians and Edwardians identified a plethora of dangers, as almost every obituary reflected on how its subject overcame the difficulties and pitfalls of being a scholar. Their concerns, at first glance, look rather heterogeneous. Scholars worried, to name a few examples, about 'overconfidence' in one's own faculties[24], the lure of 'lucrative prospects' in business[25], being 'too modest'[26], 'sensitive

22 Letter from Joseph Gouge Greenwood to Edward Frankland, 16 June 1894 [EFP, JRL, 15/1597]. Greenwood referred to the controversial opinions of Tyndall and attributed these opinions to Tyndall's originality and genuineness.

23 The inventor of the incandescent lightbulb, Joseph Wilson Swan, wrote poetry in honour of Tyndall's 'fearless' character, see: Eight lines of verse on John Tyndall by Joseph Wilson Swan, 10 June 1894 [EFP, JRL, 21/1954]; there are many additional letters in Frankland's archive relating to the Tyndall obituaries. Sometimes, there was just a short line of thanks, but in many cases, the writers shared memories of Tyndall: Letter from Benjamin Vincent to Edward Frankland, 5 July 1894 [EFP, JRL, 16/1691]; Letter from Miss Fawcett to Edward Frankland, 4 July 1894 [EFP, JRL, 16/1692]; Letter from Sir Thomas Storey to Edward Frankland, 7 December 1894 [EFP, JRL, 17/1513]; Letter from M. Johnson to Edward Frankland, 23 June 1894 [EFP, JRL, 20/1943]; Letter from L.T. Thorne to Edward Frankland, 1 July 1894 [EFP, JRL, 20/1944]; Letter from Millicent Bence Jones, daughter of Henry Bence Jones to Edward Frankland, 3 July 1894 [EFP, JRL, 21/1981]; Letter from Hodgkinson to Edward Frankland, 14 June 1894 [EFP, JRL, 21/1952]; Letter from Emily Symonds to Edward Frankland, 17 June 1894 [EFP, JRL, 21/1955]; Letter from Newlands to Edward Frankland, 16 July 1894 [EFP, JRL, 21/1956].

24 J.H.G., 'David Brewster', *Proceedings of the Royal Society of London* 17 (1869) lxix-lxxiv, lxix.

25 'Peter Martin Duncan', *Proceedings of the Royal Society of London* 50 (1892) iv-vii, iv.

26 S.W., 'John Syer Bristowe', *Proceedings of the Royal Society of London* 59 (1896) x-xii, xii.

temperaments'[27], or 'political and religious prejudice'.[28] In other words: obituaries identified a great number of heterogeneous dangers, all differently phrased and applied to differing individual contexts. To make sense of the themes that worried Victorian and Edwardian scholars, a categorization of these dangers is needed. My method in coming to such categories has been one of close reading and contextualization: which language was used in what contexts? And which concerns underlie the examples and anecdotes that were offered in obituaries?

I have identified six distinct dangers that worried Victorian and Edwardian scholars: uselessness, enthusiasm, partiality, money, fame, and distraction. Emphatically, these categories are my own: they are clusters of moral concerns that recur often in the corpus of sources that I have analysed. Distinguishing between these six dangers does help, however, to get a grip on the multifarious threats to the project of science that the Victorians and Edwardians identified. The boundaries between these groups of dangers are blurred. The dangers of fame and fortune might overlap, and scholars enthusiastically pursuing private epistemic aims, for example, could be in danger of being distracted at the same time. These dangers are also not similar in kind: scholars would strive after money, but they would never strive after uselessness. I do not claim that these six dangers are the only possible categorization, nor do I contend that these six are the only dangers that worried Victorians and Edwardians.[29] I do claim, however, that these six clusters of concerns played an important role in the corpus of obituaries that I analysed, and that they offer a tool towards the understanding of the language of vice in late Victorian and Edwardian Britain.

Note also that I use the more general word 'danger' to describe these clusters of concerns, rather than the more specific terms of 'vice'

27 W.J.R., 'Abraham Follet Osler', *Proceedings of the Royal Society of London* 75 (1905) 328-334, 334.

28 Paul Vinogradoff, 'Frederic William Maitland', *English Historical Review* 22:86 (1907) 280-289, 284.

29 Other clusters of concerns could, for example, be: nationalism versus cosmopolitanism, religious bias, politics, or amateurishness.

or 'temptation'. Let me explain this choice. Victorian and Edwardian perception of these six dangers was complex. Dangers could be sources of vices (moneymaking could be the source of the vice of avarice and was therefore perceived as dangerous), as well as the end of vices (the vice of excessive thoroughness could lead to uselessness, which was perceived as a danger to the collective standing of science). Moreover, multiple vices were associated with one cluster. Associated with the danger of money, for example, were both the vice of avarice and the vice of reclusiveness.[30] The same goes for the danger of enthusiasm: scholars might be drawn away from the goals of science by their desire for novelty, or by failing to discipline their imagination with other virtues.[31] Speaking of dangers rather than singular vices provides the space to trace out the interrelations between the various vices and temptations. It also acknowledges the complexity of Victorian and Edwardian conceptions of science and the dangers that beset it. It was the job of academic memory culture to identify these dangers, and to show how they could be neutralised. Obituaries were not guides for dealing with specific and singular vices, but rather context-rich accounts of how science was threatened from all sides.[32] Obituaries showed how their subjects dealt with such dangers.

In the coming pages, I will first discuss these six dangers, before delving into the remedies that Victorian and Edwardian memory culture offered: a balanced constellation of virtues, and a guiding love of science. Both remedies were intended to neutralise the dangers that threatened the virtuous pursuit of knowledge. I will first discuss the six dangers one by one, drawing attention to these remedies in the process.

30 See the section on money.

31 See the section on enthusiasm.

32 Collini speaks of Victorian society as a society that saw an individual as a 'remote hill station' – surrounded by all sorts of threats: Collini, 'The Idea of 'Character'', 47.

Uselessness

Uselessness was a danger that we encountered already in the introduction, where I discussed the case of Lord Acton. In his desire to accumulate as much material as he could for his magnum opus, Acton never actually came to write and publish a book. His life, some commentators argued, was therefore wasted: useless. Reason for Acton's 'vanity' was his immense knowledge and his adherence to extremely high standards of completeness and accuracy.[33] His biographer James Bryce argued that Acton's 'passion for acquiring knowledge which his German education had fostered ended by becoming a snare to him, because it checked his productive powers.'[34] Others added that Acton's 'pen seemed to be cramped by too much knowledge'[35] and that 'his very learning seems to have stood in his way.'[36] In Acton's example, his immense knowledge and his high standards of completeness and accuracy stood in the way of productivity and general usefulness. Although accuracy and completeness would surely have been regarded as virtues in their own rights, an excessive adherence to such standards led to Acton's uselessness. He failed to make the impact he could have made.

Usefulness, scholars have argued, became a major concern for learned men in the first decades of the nineteenth century. The Society for the Diffusion of Useful Knowledge, founded by Lord Brougham in 1826, was explicitly designed to provide knowledge on a large scale, which

33 Oman described Acton's life as an example of 'the vanity of human life'. See introduction, note 7.

34 James Bryce, *Studies in Contemporary Biography* (London: Macmillan and Co., 1904) 392-393. Acton's German education instilled him with the high standards of accuracy and completeness.

35 Henry R. Tedder, 'Lord Acton as a book-collector', *Proceedings of the British Academy* 1903-1904 (London) 285-288, 288.

36 'Acton (John Emerich Edward Dalberg Acton) 1st Baron (1834-1902)', Hugh Chisholm (ed.), *Encyclopaedia Brittanica* (Cambridge: Cambridge University Press, 1911) 159.

required a recalibration of the priorities of learned men.[37] Although not everyone agreed on how and to what end knowledge should be diffused, a certain degree of usefulness came to be expected of scholars.[38] Usefulness could come in many forms: not all scholars were convinced that it was their moral obligation to educate the nation for example, but at the very least, they agreed that one's publications should be useful to other scholars. Lorraine Daston has argued that scholars from the mid-nineteenth century generally adhered to Kant's ideal of communicability: 'this ideal of objectivity as communicability, shorn of every idiosyncrasy and particular perspective.'[39] By emphasising communicability, Daston argues, scientists felt urged to 'standardize their instruments, clarify their concepts, and depersonalize their writing styles to achieve communicability and commensurability.'[40] Acton's excessive thoroughness and dense style of writing threatened this ideal of communicability, and therefore his life's work was deemed useless.

There are many more examples of the danger of uselessness in academic memory culture. The experimentalist Thomas Graham (1805-1869) for example, although he was praised for his 'great enthusiasm', 'his perseverance', and his 'intense desire to know the inner structure of matter', was above all remembered for writing too slowly and too suppressed.[41] When reflecting on Graham's *System of Chemistry*, his life writer makes remarks similar to the critiques of Acton:

> It was written so slowly that the publisher said that to press him was like drawing his blood. The anxiety to be correct was painful. It give a calmness to all his writing, but really goes too far, as it rather

37 See: James Secord, 'Early Science Literacy', *Natural History* 122:10 (2014) 28-33.

38 Alan Rauch argues that the debate on usefulness tied in with debates on the moral duty of the scholar. See: Alan Rauch, *Useful Knowledge: The Victorians, Morality, and the March of Intellect* (Durham: Duke University Press, 2001).

39 Lorraine Daston, 'Fear and Loathing of the Imagination in Science', *Daedalus* 127:1 (1998) 73-95, 82.

40 Ibid. 88.

41 R.A.S., 'Thomas Graham', *Proceedings of the Royal Society of London* 18 (1870) xvii-xxvi, xviii.

> represses the enthusiasm of the reader, and diminishes the force of the words.[42]

In other words, Graham's style of writing and his excessive drive to be correct kept him from making a useful contribution to science. He failed to live up to the standard of communicability. In other words, Graham was not as useful as he could have been.

Graham and Acton were both treated as examples of uselessness. Oman's critique of Acton extends to Graham as well: 'No great book has ever been or ever will be written by a historian who suppressed self as he wrote each word: what such a book may conceivably gain in accuracy it loses in spontaneity and conviction.'[43] These harsh words of scholars as thorough as Acton and Graham imply that a bargain had to be struck between individual desires for accuracy, correctness and completeness on the one, and spontaneity, conviction and general usefulness on the other. In the cases of Graham and Acton, the scales tipped to the side of uselessness.

Another example illustrating this danger is the case of John Percy (1817-1889), a British metallurgist, about whom his life writer claimed that 'his intolerance of inaccuracy often led him to magnify points which now seem to be somewhat trivial' and that his work lacks the 'expression of his own opinion when the reader has fairly a right to expect his guidance.'[44] Percy desired too much accuracy and neglected to guide his readers, which came at the cost of his usefulness. A similar example is exhibited in the obituary of physician George Rolleston (1829-1881). Rolleston was said to never even write if he did not master a subject completely, and in the rare case that he wrote, his sentences were incomprehensible, extremely long and bristling with quotations.[45] Thoroughness and completeness were not

42 R.A.S., 'Graham', xxvi.
43 Oman, *Inaugural Lecture*, 13.
44 W.C.R.A., 'John Percy', *Proceedings of the Royal Society of London* 46 (1890) xxxv-xl, xxxvii.
45 W.H.F., 'Professor Rolleston', *Proceedings of the Royal Society of London* 33 (1882) xxiv-xxvii, xxv.

a problem in themselves, unless they interfered with one's usefulness: the influence that learned men *ought* to exert. Virtues such as thoroughness could become vices when they were valued excessively.

Percy and Rolleston, like Acton and Graham, fell short: either their prose was too suppressed, incomprehensible and dense, or they did not write at all. They neglected to be useful, caused either by an adherence to overly high standards of completeness or accuracy, or by not taking a stance clearly enough. After all, scholars were to act as torchbearers. The results of their careful and virtuous research needed to be published. This concern is also recognisable in the case of the anatomist William Sharpey (1802-1880). Sharpey, a physiologist, anatomist and for some time one of the secretaries of the Royal Society, was praised by the writer of his obituary as one of the most 'judicious, learned, and accurate investigators.'[46] However, the anonymous author of his obituary added that this was to be regretted, because it kept Sharpey from publishing his views in a coherent volume.[47] Excessive accuracy also threatened usefulness in the case of philosopher Henry Sidgwick (1838-1900), who was characterised as being cautious at the expense of 'the popularity and the apparent effectiveness of some of his work.'[48]

The danger of uselessness was not restricted to written work; also in the governance of universities and learned institutions, excessive caution or thoroughness could lead to the loss of conviction and usefulness. It was, for example, said of James Thomson (1822-1892), the brother of Lord Kelvin and a renowned engineer in his own right, that he could no longer distinguish between smaller or greater error in the business of everyday life and that in his practice as administrator, 'his extreme conscientiousness

46 'Dr. William Sharpey', *Proceedings of the Royal Society of London* 31 (1881), x-xix, xii.
47 'Sharpey', xv-xvi.
48 James Bryce, 'Henry Sidgwick', *Proceedings of the British Academy 1903-1904* (London 1904) 271-276, 273-274.

gave rise to a want of rapidity of action.'[49]

Uselessness was expressed in multiple ways. One, obviously, was unproductivity. But aesthetic considerations were equally important in determining uselessness. Above examples show that one's style of writing (or governing, as in Thomson's case) could be an indicator of uselessness. Writing in an overly suppressed manner, lacking conviction, or failing to guide readers to valid conclusions, could be as dangerous as not writing at all.[50] But why would Victorian and Edwardian learned men avoid publishing their views, and what were the reasons for writing without conviction? A main reason has already been mentioned: an excessive adherence to high standards of accuracy or completeness. In the above cases, traits that would normally be regarded as virtues –completeness, conscientiousness, accuracy, correctness– were cultivated at the expense of other virtues. No one would argue that accuracy was detrimental to the pursuit of science, but it had to be balanced against other equally important concerns.

Another danger to useful science was posed by vices of pride, vanity and overambition, as Charles Oman here illustrates with reference to Acton:

> It is this, that 'the best', the ideal, the vision of the epoch-making and infallible *magnum opus* which hovers before the mind of many a would-be writer, is the enemy of 'the good', of the useful and worthy, but comparatively unambitious, book that he is really competent to write.[51]

Oman thus links humility and usefulness: science was a collective effort that required practitioners to adhere to shared standards of communicability. Personal ambition and excessively high standards stood in the way of useful

49 J.T.B., 'James Thomson', *Proceedings of the Royal Society of London* 53 (1893) i-x, ix-x.

50 The opposite was also true: writing with too much conviction or dramatic style could also be detrimental to science. See the next section on enthusiasm.

51 Oman, Inaugural Lecture, 28

scholarship.

As the above examples have illustrated, uselessness was a major worry to Victorian and Edwardian obituarists. The danger lurked in many corners: an excessive adherence to completeness or accuracy, overambition, or just a cramped style of writing. The danger, as this suggests, lay primarily in excess or imbalance: if one cherished accuracy at the cost of productivity, correctness at the cost of communicability and impartiality at the cost of conviction, usefulness was compromised. By identifying cases in which the balance was eschew, academic memory culture offered guidelines for scholars to navigate their own lives and to be useful. Moreover, memory culture advised its consumers to maintain a healthy balance of commitments: thoroughness was important, as long as it was in equilibrium with productivity. Standards of communicability, however, could be threatened from another side as well: enthusiasm.

Enthusiasm

Although enthusiasm might sound harmless to modern ears, nineteenth-century scholars were suspicious of enthusiasm and considered it a danger if it was left unchecked. In itself, enthusiasm was not dangerous (it was crucial in overcoming obstacles, for example), but it needed to be disciplined. Unchecked enthusiasm was associated with all kinds of vices in academic memory culture, ranging from a lack of thoroughness or accuracy, to excessive spontaneity or an excessive use of the imagination. Enthusiasm could lead scholars away from the recognised goals of science by valuing the personal attractions over the shared commitments of science. In this capacity, excessive enthusiasm threatened communicability, as the collective effort required by science was at odds with idiosyncrasy and personal epistemic desires. Personal attractions and whims were a danger to the disciplined love of science.

Allow me to present a first example of the danger of overenthusiasm, to make clear why it was considered so dangerous: the obituary of Charles

Smart Roy (1854-1897). Roy was a pathologist, and had tried to broaden traditional pathology using new chemical, physiological and physical methods.[52] In his obituary in the *Proceedings of the Royal Society of London,* his biographer and later Nobel Prize winner Charles Scott Sherrington (himself a laudable physiologist and experimentalist) reflected on the scientific character of Roy. He began by describing Roy's research in the innovative field of the intersection between anatomy and pathology, in which he was applying new chemical, physiological and psychical methods to traditional pathology. Although Sherrington described Roy as 'an investigator of originality and great experimental skill', who, in his 'ingenuity', 'dexterity' and 'courage' fought against the 'hair-splitting minuteness' of traditional pathology, he also drew attention to the 'enthusiasm' that sometimes led Roy from pursuing what was recognised as good science.[53] He wrote:

> It [Roy's ingenuity and originality] continually tempted him to wander from investigations towards which he had already accomplished the preliminaries to open fresh ground in some other direction. . . . the more difficult the experiment the more attraction it had for him. . . . [It was] harmful to the quality of his work.[54]

Roy's attraction to difficult experiments and his enthusiasm in devising them led him away from common scientific goals. Interesting is the use of the word 'tempted'; Roy was remembered as giving into temptation because he did not adhere to the recognised goals of scholarship. Instead, he followed his own enthusiasm.

This suggests that enthusiasm was a problematic category in the nineteenth century, though it had been problematic since at least the sixteenth century. Enthusiasm, in early modern Europe at least, was

52 For more information on Roy, see: Mark W. Weatherall, *Gentlemen, Scientists and Doctors: Medicine at Cambridge, 1800-1940* (Woodbridge: The Boydel Press, 2000) esp. chapter 5.

53 Charles Scott Sherrington, 'C.S. Roy. 1854-1897', *Proceedings of the Royal Society of London* 75 (1905) 131-136, 132, 134-136.

54 Sherrington, 'C.S. Roy', 135.

associated with prophetic fanaticism, as several historians have argued.[55] In the sixteenth and seventeenth centuries, however, 'enthusiasm' became a pejorative category that not only denoted religious fanaticism, but philosophical (or scientific) fanaticism as well.[56] In the Enlightenment period, finally, 'enthusiasm' described the process in which 'the mind . . . becomes the object of its own worship.'[57] Although nineteenth-century scholars would not regard enthusiasm as a notion laden with fanatic religious fervour, the association with the worshipping of one's own mind persisted. In nineteenth-century Germany for example, enthusiasm was closely associated with 'enthrallment', and debates over philological specialization referred pejoratively to enthusiasm.[58] In nineteenth-century France, likewise, enthusiasm was associated with fanaticism, monomania and insanity: it was something that needed to be kept at bay.[59] In Britain, finally, enthusiasm was often equated to 'inspired' amateurishness and contrasted to thorough distanced scholarship.[60] The notion of 'enthusiasm',

55 J.G.A. Pocock, 'Enthusiasm: The Antiself of Enlightenment', *Huntington Library Quarterly* 60:1/2 (1997) 7-28, 10. For eighteenth-century British discussions on enthusiasm, see: Lionel Laborie, *Enlightening Enthusiasm: Prophecy and Religious Experience in Early Eighteenth-Century England* (Manchester: Manchester University Press, 2015). For a broader history of the concept of enthusiasm in the context of the history of knowledge, see: Lorraine Daston and Katherine Park, *Wonders and the Order of Nature, 1150-1750* (New York: Zone Books, 1998) especially chapters VIII and IX.

56 Pocock, 'Enthusiasm', 16. See also: Michael Heyd, *"Be Sober and Reasonable": The Critique of Enthusiasm in the Seventeenth and Early Eighteenth Centuries* (Leiden: Brill, 1995).

57 Ibid. 26.

58 Constanze Güthenke, '"Enthusiasm Dwells Only in Specialization": Classical Philology and Disciplinarity in Nineteenth- Century Germany', in: Sheldon Pollock (ed.), *World Philology* (Cambridge MA: Harvard University Press, 2012) 265-284, 267.

59 W.L. Duffy, 'Monomania and Perpetual Motion: Insanity and Amateur Scientific Enthusiasm in Nineteenth-Century Medical, Scientific and Literary Discourse', *French Cultural Studies* 21:3 (2010) 155–166.

60 For enthusiasm in British philology, see: Richard Utz, 'Enthusiast or Philologist? Professional Discourse and the Medievalism of Frederick James Furnivall', in: Tom Shippey and Martin Arnold (eds.), *Appropriating the Middle Ages: Scholarship, Politics, Fraud*. Studies in Medievalism 11 (Cambridge: Brewer, 2001) 189-212.

in short, was associated with the imagination, with individuality, and with amateurishness. As such, it was contrasted to 'normal' disciplined and thorough scholarship.

This is also clear in Roy's example: he could not resist the pulling force of his own originality and this kept him from aligning with the shared goals of a science or discipline. There are many more examples in academic memory culture in which such excessive originality out of enthusiasm was identified as vicious. Charles Wheatstone (1802-1875), an experimentalist and inventor who contributed greatly to the development of the telegraph, was remembered for his exquisite imagination, which at the same time distracted him from finishing his work on a subject properly:

> The writer has frequently, but in vain, urged him to complete and publish: such was the fecundity of his imagination that he would frequently work steadily for a time at a given subject, and then entirely put it aside in pursuit, it may be, of some more important or more practical idea that had presented itself to his mind.[61]

Wheatstone's enthusiasm in pursuing his private epistemic pursuits was identified as dangerous to generally recognised goals of scholarship.

Not only experimentalists like Roy and Wheatstone were exposed to the danger of enthusiasm; there are examples of mathematicians as well. The eminent mathematician James Joseph Sylvester (1814-1897) was, according to his biographer, also prone to the temptation to let his imagination take over, instead of finishing a subject properly. As in the cases of Wheatstone and Roy, Sylvester's 'fresh imaginations' and 'luxuriant enthusiasm' were said to give rise to a flood of new ideas.[62] In fact, his biographer states that 'his character and temperament militated against continuity of thought', which was the reason that Sylvester did not publish

61 'Charles Wheatstone', *Proceedings of the Royal Society of London* 24 (1876) xvi-xxvii, xxvi.

62 P.A.M., 'James Joseph Sylvester', *Proceedings of the Royal Society of London* 63 (1898) ix-xxv, xxiv-xxv, xxxiii.

as much as was expected of a mathematical genius.[63]

Obituaries not only offered examples of learned men enthusiastically giving into their private epistemic attractions, they also gave notable examples of people resisting this urge. Edward Freeman, a prominent historian who was like Acton associated with the *English Historical Review*, was praised in his obituary for criticising German scholars for their passion for '*etwas Neues*, and the consequent disposition to disparage work which did not abound with novelties, however empty or transient such novelties might be.'[64] Freeman's antipathy for 'empty' novelties stemmed from his conception of history. Herman Paul has argued that Freeman adhered to a view of history that stressed unity and continuity and therefore underlined the importance of the historian's intellectual habits and the ability to sense 'what is of real value in the historical process.'[65] A preoccupation with work that only communicated empty or transient novelties out of enthusiasm for *etwas Neues* obscured the connection between the present and the past and complicated the writing of history as recognised by Freeman.

The supposedly Germanic enthusiasm for novelties in the form of new manuscripts, whatever their historical worth, was also reflected on in the obituary of Samuel Rawson Gardiner (1829-1902), a British historian of the seventeenth century.[66] Charles Harding Firth, the writer of his obituary, reflects on Gardiner's virtue in handling new manuscripts: 'nor did Gardiner yield to the temptation to overestimate the importance of the new manuscript materials his researches brought to light, and undervalue

63 Ibid. xxiv.

64 Bryce, *Contemporary Biography,* 284. For Freeman, see: G.A. Bremner, and J. Conlin (eds.), *Making History: Edward Augustus Freeman and Victorian Cultural Politics* (Oxford: Oxford University Press, 2015).

65 Herman Paul, 'Habits of Thought and Judgement: E. A. Freeman on Historical Method', in: G.A. Bremner, J. Conlin (eds.), *Making History: Edward Augustus Freeman and Victorian Cultural Politics* (Oxford: Oxford University Press, 2015) 273-289, 281.

66 British historians, in contrast with their German compatriots, tended in general to focus more on published sources than on new manuscripts.

that which was already published in print.'[67] Enthusiasm should not blind the eyes to the value of already existing scholarship. An experimentalist like William Vernon-Venables Harcourt (1789-1871), one of the founders of the British Association for the Advancement of Science, was remembered for being too much of a lover of truth 'to be hasty in publishing views on account of their novelty.'[68] In these examples, the goals of the learned community were juxtaposed to individual fancy.

In a discipline such as mathematics, imagination and new ideas were deemed quite important by obituarists, but once again, enthusiasm needed to be moderated. Charles Watkins Merrifield's (1827-1884) obituary reflects on the tendency of specialised mathematicians to lose themselves in abstraction:

> It is a common complaint against pure mathematicians, that while they are continually pursuing, or being led by, this subject into abstractions which lie outside the region of experience, they neglect to develop those branches relating to matters of experience sufficiently to render them useful as means of calculation. Merrifield was an important exception to this rule.[69]

Not all were able to discipline their imagination. Of the continental mathematicians Augustin Cauchy (1789-1857) and Leonhard Euler (1707-1783) was written that they were 'so overwhelmed with the exuberant wealth of their own creations . . . that they did not greatly care to expend their time in arranging their ideas in a strictly logical order or even in establishing by irrefragable proof propositions which they instinctively felt

67 C.S. Firth, 'Dr. S.R. Gardiner', *Proceedings of the British Academy* 1903-1904 (London 1904) 294-301, 298.

68 J.P., 'William Vernon-Venables Harcourt', *Proceedings of the Royal Society of London* 20 (1872) xiii-xvii, xvii.

69 'Charles Watkins Merrifield', *Proceedings of the Royal Society of London* 36 (1883) i-iii, i.

. . . to be true.'[70] These remarks echo the Enlightenment view of enthusiasm as the worship of one's own mind. As these conveniently foreign examples suggest, enthusiasm could lead men away from the recognised goals of science, such as the publishing of one's views in a thorough and complete manner.[71] Again, there is some overlap with the danger of uselessness: undisciplined enthusiasm threatened communicability as much as excessive thoroughness and unproductivity.

Enthusiasm was akin to ambition. Being identified with new theories like Darwinism, for example, offered many advantages for young scholars. The life of George John Romanes (1848-1894) shows how speculative essays like Romanes' 'Physiological Selection' caused anxiety in the ranks of established scholars. In this essay, he claimed that the principles of *separation* and *sterility* were central to natural selection. However, he offered no proof, which caused fellow naturalists to accuse him of trying to formulate an alternative to Darwin's theory of evolution. Although Romanes denied the accusation, the writer of his obituary states that if he had made a more modest claim concerning separation and sterility, 'no one would have fallen into the mistake of supposing that it was his intention to substitute a new doctrine for the Darwinian.'[72] Ambition, then, was also identified as a danger to the collective project of science.

Biographies and obituaries also offered ways to deal with enthusiasm. Firstly, obituaries stressed the importance of balance: imagination and ingenuity had to be balanced by virtues of thoroughness and accuracy, enthusiasm had to be curbed by discipline and distantiation. Charles Darwin (1809-1882), for example, was remembered both for having an 'atavic tendency' for hypotheses, but also 'an equally strong need

70 Alexander McFarlane, *Lectures on ten British Mathematicians of the Nineteenth Century* (London: Chapman & Hall, 1916), 76.

71 For virtue, vice and national stereotypes, see: Paul, 'German Thoroughness in Baltimore'.

72 J.B.S., 'George John Romanes', *Proceedings of the Royal Society of London* 57 (1895) vii-xiv, x-xi.

to test them by well-devised experiments.'[73] Secondly, enthusiasm could be checked by pursuing more practical objects of research alongside subjects in which one was intrinsically interested: a balance in practices. The above-mentioned mathematician Charles Watkins Merrifield was praised for holding himself 'free from the fascination of any line of abstract reasoning which his work may have exposed, and devoted his time and energy to the . . . task of increasing the usefulness of mathematics', by devising mathematical tables.[74] Something similar was said of the Irish mathematician George Francis Fitzgerald (1851-1901), who held public education in higher regard than selfish research on the cutting edge of science. His biographer wrote:

> Greater service could be done by working towards the raising of the general level than by a pioneering quest, solitary or with only a few like-minded spirits, into lands too far removed from human traffic to be capable of utilization and absorption for generations to come.[75]

Avoiding the dangers of enthusiasm required great self-discipline. Firstly, discipline was needed to pursue more mundane and practical research, as in the case of Merrifield. Enthusiasm could be checked by pursuing the right kind of useful knowledge. Secondly, self-discipline was a means to achieve a balanced constellation of virtues, in which imaginativeness was on par with accuracy, thoroughness and conscientiousness. This balancing act reflected a tension between individual desires and collective standards of communicability. Consequently, one had to discipline one's own desire: only by forgoing private attractions in favour of the collective could vices be avoided.

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73 Thomas Henry Huxley, 'Charles Robert Darwin', *Proceedings of the Royal Society of London* 44 (1888) i-xxv, xxiii.

74 'Charles Watkins Merrifield', i.

75 O.J.L. 'George Francis Fitzgerald. 1851-1901', *Proceedings of the Royal Society of London* 75 (1905) 152-160, 153, 157.

Prejudice

A third danger to the collective pursuit of knowledge identified by Victorian and Edwardian obituaries was prejudice. In short, obituarists were concerned with the tendency of some scholars to close their minds to new evidence, and to cling to preconceived ideas or positions that were no longer justifiable. Scholars did so, obituaries stated, either because they were afraid that their personal reputation was at stake, or because they were too attached to long-held ideas, theories or scholarly traditions. This danger was associated with vices of closed-mindedness, partiality, and unfairness.[76]

For some obituary writers, the danger of prejudice was closely related to the controversies that plagued scholarship around 1900: controversies could lead to personal feelings towards a given theory. To cite the obituary of John Frederick William Herschel (1792-1871), a famous polymath working in the fields of mathematics, astronomy, chemistry and botany:

> In all such transitions, besides the effect of habit, the adherents of an old theory are often bound to it by personal feelings, as if the giving up their former convictions implied some intellectual inferiority; and it may happen that the champions of the new one do not bear their triumph meekly.[77]

Personal feelings of inferiority on the account of old theorists and superiority on the account of the adherents to a new theory needed to be disciplined and virtues of modesty and selflessness needed to be employed in order to safeguard the pursuit of knowledge from these potentially damaging

76 Vice epistemologists often speak of closed-mindedness in this context: 'an unwillingness to engage seriously with relevant alternatives to the beliefs one already holds', Heather Battaly, 'Closed-Mindedness and Dogmatism', *Episteme* 15:3 (2018) 261–282, 261.

77 T.R.R., 'John Frederick William Herschel', *Proceedings of the Royal Society of London* 20 (1872) xvii-xxiii, xviii.

personal feelings.[78]

In geology, for example, controversy and prejudice had held sway since the end of the eighteenth century. The controversy between the plutonists, inspired by James Hutton (1726-1797), one of the first to propose a scientific theory concerning the age of the earth, and the neptunists, inspired by Abraham Gottlob Werner (1749-1817), who adhered to the then popular theory that all geology was once formed by oceans, had raged for several decades.[79] No consensus was reached and partaking in the debate was controversial, as personal feelings and biases were constantly at play.[80] Roderick Impey Murchison (1792-1871) was one of the first geologists to break through the fortified positions of both neptunists and plutonists. Although he was of the generation that could not escape bias from Wernerians or Huttonians, Murchison was at first educated as a soldier and only 'when his powers of observation had matured . . . he was happily left to acquire his knowledge direct from nature, with but little bias from the controversies then so keenly carried on between the followers of Hutton and Werner.'[81] As a geological collector, Murchison pursued knowledge in a disinterested and unbiased way. The simple practice of collecting facts kept him free from partiality and controversy.[82] As Merrifield withstood the pulling force of his imagination by focusing on more practical topics, so did Murchison focus on the disciplined collection of facts to avoid prejudice.

78 Mathematician and astronomer John Herschel argued as early as 1830 that true science was built on freedom from prejudice, of which the mind had to be actively cleared. See: Levine, *Dying to Know*, 19.

79 For the early reception of Hutton and Werner and the gradual breakdown of both theories, see: M. J. S. Rudwick, 'Hutton and Werner Compared: George Greenough's Geological Tour of Scotland in 1805', *The British Journal for the History of Science* 1:2 (1962) 117-135.

80 For a wonderful analysis of geological controversies, see: James Secord, *Controversy in Victorian Geology. The Cambrian-Silurian Dispute* (Princeton, NJ: Princeton University Press, 1986).

81 A.G. 'Roderick Impey Murchison', *Proceedings of the Royal Society of London* 20 (1872) xxx-xxxiii, xxxi.

82 For the avoidance of bias in early modern science, see: Cohen, *How Modern Science Came Into the World*, 486-487, and chapters xii, xiii and xvii.

Murchison overcame prejudice by studying nature in a disinterested way, while others actively sought controversy to break down old conceptions. Geologists Sir Charles Lyell (1797-1875), known for his *Principles of Geology,* and George Poulett Scrope (1796-1876) were praised for their boldness and courage in overcoming prejudice. Where Murchison avoided the debate, Scrope and Lyell attacked the old doctrines head on, leading to accusations of prejudice and atheism. Only through Scrope's 'boldness and sagacity' and his capability to 'profit alike from the judicious criticism of friends and the unsparing ridicule of opponents' could prejudice in geology be overcome.[83] Men like Scrope and Lyell provided counter-narratives to existing views in science, but were liable to prejudice as well: they had to avoid the pitfalls of their predecessors. They did so by cultivating virtues of boldness, sagacity and open-mindedness.[84]

Obituaries provided examples of how prejudice could be prevented. Modesty and courage were central virtues in overcoming personal feelings of superiority, as the obituary of the renowned physician Thomas Watson (1792-1884) illustrates. Watson, who held strong opinions on many subjects, was above all praised for 'his freedom from prejudice' and his 'judicial impartiality.' On finding himself in controversy because of his views, and being in the wrong, Watson would habitually 'declare himself convinced in a sense contrary to his former opinion, and to set forth with the utmost clearness and graceful simplicity the new conclusions to which he had been led.'[85] On many other occasions, it was this openness to criticism that safeguarded against prejudice.

Some obituaries also show what happened when scholars continued to adhere to preconceived ideas, as in the case of a foreign member of the

83 'George Poulett Scrope', *Proceedings of the Royal Society of London* 25 (1877) i-iv, ii-iii; see also: 'Sir Charles Lyell', *Proceedings of the Royal Society of London* 25 (1877) xi-xiii.

84 For open-mindedness as an epistemic virtue, see: Wayne Riggs, 'Open-mindedness', *Metaphilosophy* 41 (2010) 172-188.

85 G.J., 'Thomas Watson', *Proceedings of the Royal Society of London* 38 (1885) v-ix, ix.

Royal Society, the famous German chemist Justus Liebig (1803-1873). Liebig was said to have an increasing tendency to be dogmatic and that he in 'this high flight had often maintained more than he had proved, that the proof was in many points still wanting.'[86] The habit of adhering to an idea once taken up was also prevalent in the case of Edward James Stone (1831-1897), astronomer at the Royal Observatory, who made erroneous observations that fitted his theories: 'It was in vain that Airy, Adams, and Cayley endeavoured privately to convince Stone of the error of his conclusion', something which 'completely blinded Stone's eyes to the true state of the case.'[87] Personal feelings blinded one to the truth and had to be disciplined in order to pursue knowledge. Charges of prejudice, scientific orthodoxy and being old-fashioned were reserved for those letting personal feelings of superiority or inferiority interfere with a truthful pursuit of knowledge.[88] Obituaries pointed to the importance of modesty and selflessness, especially in scientific controversies. Deceased scholars were often praised for these virtues, because they had checked personal feelings of superiority.

Scholarship, a collective project that cherished communicability, ideally relied on the fruitful cooperation of learned men. Prejudice and personal attachment to theories could thwart that cooperation. Therefore, obituaries underlined the importance of self-discipline, especially in cases of controversy. To speak with the words of the Victorian historian George Grote: 'Men's feelings or emotions . . . corrupt their sense of truth.'[89] Obituaries, luckily, offered examples of how these feelings or emotions could be overcome.

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86 'Justus Liebig', *Proceedings of the Royal Society of London* 24 (1876) xxvii-xxxvii, xxx-xxxi, xxxiv. For a discussion of how biased Liebig actually was, see: Alan J. Rocke, 'Pride and Prejudice in Chemistry. Chauvinism and the Pursuit of Science', *Bulletin for the History of Chemistry* 13/14 (1993) 29-40

87 D.G., 'Edward James Stone', *Proceedings of the Royal Society of London* 62 (1898) x-xxiii, xxi.

88 Richard Owen, an anti-Darwinian naturalist was criticised for being orthodox, which led to his isolation and embitterment in later years: W.H.F., 'Richard Owen', *Proceedings of the Royal Society of London* 55 (1894) i-xiv, xii-xiii.

89 'George Grote', *Proceedings of the Royal Society of London* 20 (1872) vii.

The three dangers of uselessness, enthusiasm and prejudice recur in a broad range of obituaries throughout the period that this book aims to study. In general, vices associated with these dangers seemed to stem from the practice of scholarship itself. Enthusiasm, like thoroughness or the public defence of scientific theories, were part and parcel of scholarly practice in the years around 1900. Only when the balance went askew and threatened standards of communicability, only then was it seen as problematic. However, Victorians and Edwardians were not only concerned about problems arising from the practice of scholarship itself, they also saw their pursuits threatened by more mundane dangers: money, fame and distraction.

Money

Propensities for moneymaking, seeking fame or acting in society might seem to be obvious dangers to scholars around 1900, but money, fame and gentlemanly society were at the same time an integral part of what it meant to be a scholar around 1900. As for money: in industrialised and capitalist Britain, money was essential to a scholarly life, as membership of learned societies and gentlemanly life in general was rather costly.[90] In addition, learned societies like the Royal Society relied heavily on personal financial support to encourage the pursuit of knowledge, in the form of medals for distinguished fellows or by appointing honorary fellows or officials.[91] Although wealth played a major role in scientific culture, the pursuit of knowledge was often seen as incompatible with the pursuit of business,

90 In 1900, for example, one had to pay ten pounds to be admitted to the Royal Society and four pounds annually, respectively the equivalent of 750 pounds and 300 pounds nowadays. In addition, members had many social meetings that put a further burden on their finances, which was of course added to the daily costs of living in the metropolis and taking care of a family, which was a heavy financial burden as well. See: 'Statutes of the Royal Society', *Year-Book of the Royal Society* (London, 1900) 40-58, 44. For the costs of raising a family and providing them with education, see: John Burnett, *A History of the Cost of Living* (Harmondsworth: Penguin Books, 1969) 335-344.

91 Marie Boas Hall, *All Scientists Now,* 143.

complicating the ways in which scholars could make their living.[92] Dealing with money was both dangerous and necessary. Sheldon Rothblatt, for example, has argued that business keepers were often convinced that a 'college life ruins a man for a business career.'[93] On the other hand, college men were also disdainful of business and commerce: 'a man of character could not remain a man of character unless he avoided business and the pursuit of wealth.'[94]

In his monograph on Joseph Hooker, Jim Endersby sketches how this tension between the need for money and the need for a gentlemanly status was experienced as a problem. The naturalist's dilemma was 'to show that one could work for a living and still claim genteel status; for with such status came a claim to the public's support and trust, and thus to the government's money.'[95] Not only naturalists, but almost all scholars who were not endowed with a fortune by birth experienced these problems, and engaged in many seemingly ungentlemanly practices to gain the status of learned gentleman. Even historians like Edward Augustus Freeman, who were disdainful of popular history writers for the public, of the likes of James Anthony Froude (1818-1894), wrote 'simple' history textbooks for children in order to support their income, because highly sophisticated and thorough works of history did not provide the money necessary to even be a professional historian.[96] Learned societies also recognised the effect of

92 For an excellent discussion of how money and knowledge were (morally) entangled in nineteenth century America, where the infrastructure for science was far less developed, see: Paul Lucier, *Scientists and Swindlers: Consulting on Coal and Oil in America (1820-1890)* (Baltimore: Johns Hopkins University Press, 2008).

93 Sheldon Rothblatt, *The Revolution of the Dons: Cambridge and Society in Victorian England* (Cambridge: Cambridge University Press, 1968) 250-252, 268.

94 Ibid. 258

95 Endersby, *Imperial Nature*, 7.

96 For Freeman, Froude and the tension between professional history and writing for the public, see: Ian Hesketh, 'Writing History in Macaulay's Shadow: J.R. Seeley, E.A. Freeman, and the Audience for Scientific History in Late Victorian Britain', Journal of the Canadian Historical Association/Revue de la Societé historique du Canada 22:2 (2011) 30-56. For Freeman's embroilment with Froude, see: Hesketh, 'Diagnosing Froude's Disease'.

goods such as recognition and money on men's desires, and used rewards, such as prizes, medals, honorary fellowships, offices and stipends to direct scholars towards what was recognised as good science.[97] In other words, making money was part of the balancing act of being a scholar around 1900: a mundane desire for money was seen as legitimate as long as it was controlled by a love of science.[98]

Money was thus central to scientific lives and scientific pursuits, but only in moderation. Excessive moneymaking and living a life of luxury were considered incompatible with a love of science.[99] Although several entrepreneurial scholars, like the self-made man Walter Weldon (1832-1885), who invented a very cheap and profitable way to produce chlorine, and Daniel Hanbury, a leisured botanist and holder of a wealthy pharmaceutical practice, amassed fortunes with their scientific work, their obituaries stressed that all this moneymaking was a mere by-product of their disinterested search for truth. Weldon was, according to his biographer, without 'a trace of the sordid attributes of the mere business man' and his undiminished labour, even when he became very rich, was considered a sign of his veracity and his character.[100] Hanbury, in addition, was a man who frequently travelled to the continent, but as his biographer emphasised 'not for commercial objects, but in pursuit of pharmaceutical information.'[101] Decimus Burton (1800-1881), a renowned architect, had a profitable practice and amassed great wealth, but was never 'suspected of sacrificing the interest of a client for his own glorification, or for the

97 Archibald Smith, for example, was giving 2000 pounds for a 'labour of love', not as payment, but rather as recognition: 'Archibald Smith', *Proceedings of the Royal Society of London* 22 (1874) i-xix, xvii.

98 For an analysis of the struggle between romantic love and money in Victorian fiction, see: Elsie B. Michie, *The Vulgar Question of Money: Heiresses, Materialism, and the Novel of Manners from Jane Austen to Henry James* (Baltimore: Johns Hopkins University Press, 2011).

99 Endersby, *Imperial Nature*, 269.

100 F.W.R. 'Walter Weldon', *Proceedings of the Royal Society of London* 46 (1890) xxiv-xix, xxi.

101 'Daniel Hanbury', *Proceedings of the Royal Society of London* 24 (1876) ii-iii, ii.

indulgence of his own individual fancies.'[102] In addition, medical men like William Gull (1816-1890) were praised for 'practicing a lucrative profession with less eagerness to grasp at its pecuniary rewards.'[103]

Money and wealth, as the above examples suggest, were not a problem, as long as they were not the sole aim of the scholar. But what happened when the love of money trumped the love of science? One example is offered in Francis Galton's autobiography, in which Galton (1822-1911) discusses the scientific life of the classicist and inventor Matthew P. Watt Boulton (1824-1894), who was perhaps too wealthy:

> His large fortune also removed the stimulus which necessity gives for getting through work and having done with it, instead of lingering indefinitely. He consequently grew amateurish, wasting thought on ingenious paradoxes and literary trifles, and failed to check a natural tendency towards reclusiveness and some other oddities of disposition.[104]

In Boulton's case, too much wealth proved detrimental for his scientific work, because it took away the stimulus for being useful. His wealth led to amateurish habits and forced him to surrender to his inborn reclusiveness. This suggests that the pursuit of at least a certain amount of wealth, in the eyes of Galton, was an antidote to reclusiveness and amateurishness. Scholars needed to operate in society in order to be useful. The need to make money thus was a disciplining factor in science.

The scale could also tilt to the other side, loving money over science. This was a very real threat, not only to scholars, but also to the nation as a whole, as the example of Sir Frederick John Owen Evans (1815-1885), scientific hydrographer and officer of the Royal Navy, suggests. Evans, being

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102 J.F., 'Decimus Burton', *Proceedings of the Royal Society of London* 34 (1883) viii-x, ix.

103 P.H.P.S., 'Sir William Gull', *Proceedings of the Royal Society of London* 48 (1891) viii-xii, ix.

104 Francis Galton, *Memories of My Life* (London: Methuen & Co, 1908) 19.

extremely accurate, painstaking and patient according to his biographer, at times even over-fastidious, was very much occupied with problems of the compass in ironclad ships.[105] However, the entire Admiralty, struggling with these problems, was a frequent victim to shady 'individuals who come with quasi inventions, sometimes backed by officers of rank, well meaning but necessarily ignorant of the subject, professing to relieve all the troubles of compass management on board ship.'[106] These con men, with their attack on the national purse, were 'defeated by the wise and persistent course of action adopted by Captain Evans.'[107] These semi-scientific compass 'experts' who tried to make money out of the Admiralty's needs offer a striking contrast to true scientific men like Weldon and Hanbury, because in the case of the latter two it was the pursuit of truth that won over the pursuit of money. The juxtaposition of virtuous Evans with vicious con men shows how virtuous science benefited the nation.

In the last two decades of the nineteenth century, the prospect of a lifelong university career became a realistic option to many scholars, although the rewards were often less high than they were in business or in government service.[108] Pursuing an academic career could be a conscious choice to make less money for the sake of pursuing scholarly interests. This was the case for William Stanley Jevons (1835-1882), who sacrificed the prospect of earning a small fortune at the Australian Royal Mint for the continuance of his studies at University College London. Jevons' reflection on this choice was cited in his obituary: 'I ask, is everything to be swamped with gold? . . . am I to sacrifice everything that I really desire, and that

105 G.H.R., 'Frederick J.O. Evans', *Proceedings of the Royal Society of London* 40 (1886) i-vii, ii, iv, vi.

106 G.H.R., 'Evans', vi.

107 Ibid.

108 Learned men in universities or clerical positions often had to take on extra jobs to make money, one example is Miles Joseph Berkeley: Joseph Dalton Hooker, 'Miles Joseph Berkeley', *Proceedings of the Royal Society of London* 47 (1890) ix-xii, ix, xii. For the prospect of academic careers in the late nineteenth century, see: Engel, *From Clergyman to Don*; and: Rothblatt, *The Revolution of the Dons*; and Stuart Jones' discussion of these themes in: Jones, *Intellect and Character in Victorian England*, 2-4.

will I think prove a really useful way of spending life?'[109] Men in university positions, like Jevons, were on several occasions tempted to leave the university for lucrative practices or positions outside academia. Obituaries praised those who did not. The example of the mathematician Arthur Cayley shows how scholars should deal with this temptation. Himself a talented barrister, Cayley resisted the temptation to pursue a larger practice, although many offers were presented to him:

> Had he remained at the Bar and devoted himself to its business, he could have made a great legal reputation and a substantial fortune . . . but the spirit of research possessed him; it was not merely will but an irresistible impulse that made the pursuit of mathematics, not the practice of law, his chief desire. . . . He regarded his legal occupations mainly as the means of providing a livelihood.[110]

In fact, Cayley resisted every temptation that might stand between him and the pursuit of knowledge. His biographer even likened him to 'the patriarch Isaac who, when the Philistines claimed a well which he had dug, went on and dug another, and when they claimed that, too, went on and dug a third.'[111] Cayley's love of science trumped all other urges and kept him from vice.

Also within the humanities, the sagacious attitude of Cayley was seen as a model. Likewise, moneymaking was seen as a temptation to be resisted. The historian Samuel Rawson Gardiner was said to have 'desired neither wealth nor fame', and economical theorist Viscount Goschen (1831-1907) was praised in the following manner: 'with all his inherited aptitude for business, and his interest in financial questions, I think few men cared

109 R.H., 'William Stanley Jevons', *Proceedings of the Royal Society of London* 35 (1883) i-xii, iii.
110 A.R.F., 'Arthur Cayley', *Proceedings of the Royal Society of London* 58 (1895) i-xliii, vii.
111 Ibid. xxi.

less about money-making for its own sake.'[112] Goschen's case is interesting: as director of the Bank of England and Cabinet Minister, Goschen had amassed a considerable fortune. It was the goal towards Goschen's efforts were oriented that mattered to the writer of his obituary, not the extent of his fortune (although this fortune could explain why did not care for moneymaking in the first place). In short: moneymaking, although an integral part of a scholarly life around 1900, needed to be checked by a stronger love of science. The cultivation of a love of truth and balancing one's desires were antidotes to avarice and amateurishness.

Fame

The dangers of fame, recognition and honour were treated similarly to the dangers of money: pursuing fame for its own sake was considered vicious. Again, a sagacious attitude like Cayley's was prescribed for dealing with these temptations. On the other hand, a certain amount of recognition was of vital importance to the status of the scholar in Britain: a balance had yet again to be struck. One example of this balancing act is provided in the obituary of Thomas Henry Huxley:

> Titular honours had no attractions for Huxley, and it is no secret that he at a comparatively early date declined the offer of knighthood. . . . Not that he was insensible to the value of a public recognition of his worth, for when, in 1892, Her Majesty was graciously pleased that he should become a member of the Privy Council, he accepted with pleasure so unwonted a signal of the recognition of scientific worth.[113]

Recognition of service and honours were not goods that should be pursued for their own sake. Rather, recognition was bestowed in recognition of

112 Firth, 'Gardiner', 276-277; Milner, 'George Joachim. First Viscount Goschen. 1831-1907', *Proceedings of the British Academy* 1907-1908 (London 1908) 359-364, 361

113 M.F., 'Thomas Henry Huxley', *Proceedings of the Royal Society of London* 59 (1896) xlvi-lxvi, lxv.

one's scientific worth.[114] The obituaries of learned societies were riddled with allusions to these honours and how scholars ought to deal with them. Jealousy, for example, was envisioned to be a cardinal vice, and was often contrasted with modesty in the context of honours and recognition.[115]

Honours, fame and recognition were seen to be reserved for eminent and established scholars, rather than the young and ambitious. Writers of obituaries often felt the need to underline that their subjects never fell into the temptation of fame. About James David Forbes (1809-1868), a glaciologist who became succesful at a relatively young age, was said: 'the excitement of young and successful authorship seems never for a moment to have turned his head, or to have made him bate one jot the patient industry.'[116] But even at a later stage of someone's life, actively searching fame, honour or popular acclaim was seen as giving into temptation. The example of Robert Knox (1791-1862), a controversial and very popular Scottish public anatomist, was employed in the obituary of a less popular anatomist, Allen Thomson (1809-1884), to serve as an example of how scholars should *not* behave.[117] Knox was accused of being egotistical and sarcastic in order to discredit Thomson and his colleague Sharpey. In contrast, the good Thomson was praised for being cautious and having a pure and steadfast career. Because Thomson did not strive to become famous or popular like Knox, he was regarded as a virtuous man.[118]

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114 For an example similar to Huxley's declination of knighthood, see: C.S.T., 'Sir John Tomes', *Proceedings of the Royal Society of London* 59 (1896) xiii-xiv, xiv.

115 See for example this passage from James Cockle's obituary: 'his modesty was remarkable; rarely speaking of his own work, he was ever ready to recognise and do full justice to the work of others. There was in him none of the petty jealousies which haunt meaner minds', in: R.H., 'Sir James Cockle', *Proceedings of the Royal Society of London* 59 (1896) xxx-xxxix, xxxviii.

116 'James David Forbes', *Proceedings of the Royal Society of London* 19 (1871) i-ix, iii.

117 Knox allegedly procured bodies for his anatomical experiments by cooperating with the murderers William Burke and William Hare. See: A.W. Bates, *The Anatomy of Robert Knox: Murder, Mad Science and Medical Regulation in Nineteenth-Century Edinburgh* (Brighton: Sussex Academic Press, 2010).

118 W.A., 'Allen Thomson', *Proceedings of the Royal Society of London* 42 (1887) xi-xxviii, xv, xxi.

Like Knox, the Irishman Samuel Haughton (1821-1897), a broad scientific writer, was accused of working solely for reputation and sensation. In an anonymously published article in *Nature*, Peter Guthrie Tait, an energy physicist and harsh critic of several of his colleagues, even spoke of a

> morbid craving for excitement . . . [that] has led to the introduction of Sensation (as it is commonly called), not merely into our newspapers and novels, but even into our pulpits. It could not be expected that our popular scientific lectures would long escape the contamination.[119]

Responsible for the contamination of science by sensation was, according to Tait, the Irishman Haughton. Tait accused Haughton not of writing sensational pieces of journalism, but for doing so while claiming to be scientific: 'proof that we are dealing with Sensation where we looked for Science.'[120] Tait offered numerous instances in which Haughton, who in a lecture applied the principle of least action to all kinds of arenas, fails to be scientific. By writing for popular acclaim and from a craving for excitement, Haughton abused science and introduced nothing but sensation. By contrasting Haughton's writings to accurate scientific findings, Tait aimed to show that Haughton was just a sensational pretender, who 'plunges headlong in a wild sea of speculation'.[121] Instead of sensation, Tait offered science and drew up moral boundaries between Haughton and himself. As we shall see in the next chapter, Tait's critique of Haughton was aimed at a particular brand of science, which he associated more with the group of metropolitan physicists associated with John Tyndall. Tait, as I will argue more extensively in chapter 3, militated against the use of the imagination in science and saw Haughton's 'sensation' as yet another example of the vices of his opponents.

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119 Peter Guthrie Tait, 'Sensation and Science', *Nature* (6 July, 1871) 177-178, 177.

120 Ibid.

121 Ibid. 177.

As we have seen earlier, obituaries offered clues to deal with the danger of fame. Models for virtuously coping with fame or honours were for example presented in the obituaries of Sir James Clark (1788-1870), for some time physician to the queen, and Sir George Burrows (1801-1887), also a physician, who actively refused all distinctions offered to them. The life writer of Clark even seems somewhat frustrated by this fact, as it complicated his job of writing an obituary: 'Clark never sought any honour: he was, indeed, singularly indifferent to the recognition of his services, and, provided the end was gained, did not desire that his share in it should be known . . . much of what he did is scarcely known . . . he was so little self-obtrusive that few men knew the extent of his acquirements.'[122] In a similar vein, of Burrows was written that he could have become more popular as a teacher or researcher, but that being of 'general utility' was deemed much more important by him.[123] The dangers of fame and uselessness also overlapped.

Another example of the role fame and recognition could play in the pursuit of knowledge points again to the ambiguity of both money and fame in learned lives. On the one hand, wealth and recognition should not be sought after, but on the other hand, both were of tremendous importance in gentlemanly society at large and learned circles specifically. The obituary of the Norwegian Sophus Lie (1842-1899), a foreign member of the Royal Society, offers a dramatic example of the tension between ideals of selflessness and the reality of a scientific life. Lie, a talented mathematician working on group theory, grew increasingly depressed as the merits of work were not recognised by mathematicians. He was 'voyaging through his sea of thought alone, at the end finding himself weary, isolated, unacknowledged, perhaps therefore discouraged.'[124] Finally, the chair of Mathematics at the

122 'Sir James Clark', *Proceedings of the Royal Society of London* 19 (1871) xiii-xix, xiv, xix.
123 J.P., 'Sir George Burrows', *Proceedings of the Royal Society of London* 43 (1888) vi-viii, vi.
124 A.R.F., 'Sophus Lie. 1842-1899', *Proceedings of the Royal Society of London* 75 (1905) 60-68, 64.

University of Leipzig was offered to him, granting him access to a larger group of pupils and recognition of his work. Some honours were conferred, but as his obituary tells us, 'recognition appears to have been, not merely slow in coming, but almost too late when it came. . . . He suffered from sleeplessness, and developed nervous symptoms: the result was a complete breakdown in 1889.'[125] Lie's example is illustrative of the important role played by recognition in the Victorian and Edwardian perception of scholarship. A scholarly life without reward or recognition was unfulfilling. Knowledge for knowledge's sake was the ideal, and modesty and self-restraint were important virtues that were oriented towards this ideal, but mechanisms of recognition and reward were important stimulants for men to pursue epistemic goods.

Established scholars were to play an important role in these mechanisms of reward and recognition. What was often stressed in obituaries was the advice provided by older and eminent men to the young. Men like Cayley were praised specifically for their role in generously guiding and valuing the young:

> whose work he was always willing to recognise. He ignored the fact that he was a great mathematician- probably it never occurred to him to think of his doings: but it may be doubted whether this unconsciousness of his greatness ever proved at once more fascination or more bewildering than when he was discussing scientific results with young men.[126]

Again, virtues like modesty and selflessness were of extreme importance in safeguarding the boundaries of what was recognised as good scientific conduct. Not falling into temptation could, in this way, also be collectively achieved. Like wealth, recognition was as central to scientific pursuits as it was dangerous.

125 Ibid. 67.
126 A.R.F., 'Cayley', xx.

Distraction

As the above examples already suggest, living a scientific life in Victorian and Edwardian Britain was a constant effort to live up to the standards of the scientific community and to keep dangerous vices at bay. Moreover, like the concerns with wealth and recognition show, learned men in Britain around 1900 did not solely live a scientific life in the sense of the ascetic scholar. They were at the same time part of British civilised society, were members of various societies, both learned and lay, had time-consuming correspondences and societal duties, and had to take care of large families and make a living as well. A scholar was never solely a scholar. A final theme that worried Victorian and Edwardian obituary writers, then, had to do with the balance to be struck between demands of civilised society on the one hand and scientific ideals on the other. It was regarded a cardinal vice to detach oneself from society and the duties one had towards it, but on the other hand, men should not give themselves entirely to society either. Scholars had to manage their relationship to society as well. Again, there is some overlap between these concerns and the other dangers I identified earlier. The crux of the matter in this cluster of concerns is not the content of one's research or styles of writing, but the balancing of various societal roles and duties.

Detachment was perceived to be one of the vices that grew from an all too great attachment to one's research, placing it at odds with the demands of society. An anecdote tells us of the mathematician Sylvester's detachment, when he, during work in the library, 'suddenly looked up from a paper in the hall of study and demanded of the corporal on duty, "What year is it?"'[127] Of the Irish mathematician Sir William Rowan Hamilton (1805-1865) it was said that although he was 'a master of pure time . . . , he was not a master of sublunary time.'[128] These accusations were frequently uttered against mathematicians, but scholars in other fields of research

127 P.A.M., 'Sylvester', xviii.
128 McFarlane, *Ten British Mathematicians*, 29.

were also prone to detachment or otherworldliness. Anthony Mervyn Reeve Story-Maskelyne (1791-1879), a classical scholar, also grew detached from society and was criticised for it as he retreated into the great minds of Greece and Rome.[129] Something similar was said of the classical scholar Robinson Ellis (1834-1913): 'he was very absent-minded, and innumerable stories are told of strange responses, which were probably quite innocent, though some found in them a vein of ironic humour. He had much that was childlike in his character.'[130]

The concern of biographers with detachment comes to the fore quite frequently in the sources, as they often stressed the fact that although a scholar worked hard and devoted much time to his work, they were by no means detached from society or a recluse.[131] Francis Galton, when discussing the ideal 'man of science' in his *English Men of Science*, even argued that a person who is deficient in business habits corresponded to 'the old-fashioned caricature of scientific men, who are absorbed in some petty investigation . . . and noted for absence of mind.'[132] The ideal man of science, according to Galton, had to know his way around civil society as well.

Interestingly, studies of absent-mindedness in early modern science or in other national contexts depict absent-mindedness as something positive rather than negative. Gadi Algazi, writing on the cultivation of the learned habit of absent-mindedness in early modern Europe stresses that

129 'Mr. Anthony Mervyn Reeve Story-Maskelyne', *Proceedings of the Royal Society of London* 29 (1879) xx-xxi, xxi.

130 Albert C. Clark, 'Robinson Ellis. 1834-1913', *Proceedings of the British Academy* 1913-1914 (London, 1914) 517-524, 522.

131 Henry John Stephen Smith (1826-1883) for example, although unmarried, frequented banquets, picnics and croquet parties: McFarlane, *Ten British Mathematicians*, 62.

132 Francis Galton, *English Men of Science. Their Nature and Nurture* (London: Macmillan and Co, 1874) 132.

emotional detachment served as a marker of devotion.[133] Heinz Schlaffer has written similarly of nineteenth-century German scholars, arguing that detachment from society was seen as love of truth.[134] Also in Dutch academia, absent-mindedness and retreat from societal duties were seen as markers of devotion.[135] In the obituaries that I cited above, however, absent-mindedness was deplored. The British case, then, seems to be different. Absent-mindedness was associated with genius, and, as Richard Yeo has observed, genius became suspect in the course of the nineteenth century.[136] The historical trajectory of absent-mindedness in Britain thus differed somewhat from its counterparts on the European continent: absent-

133 Gadi Algazi has done wonderful work on the subject of learned absentmindedness and detachment. He has argued that when celibacy restrictions were loosened for scholars in the fifteenth century, scholars developed new ways of devoting themselves to their higher goals within family households. Habits of detachment were cultivated to 'withstand temptations and distractions and devote themselves to higher things'. Moreover, Algazi rightly states that celibacy at the British universities remained obligatory for college fellows well into the nineteenth century, making his case interesting for this study as well: Gadi Algazi, 'Scholars in Households: Refiguring the Learned Habitus, 1480-1550', *Science in Context* 16 (2003), 9-42, 12, 14. See also: Gadi Algazi, '"Geistesabwesenheit": Gelehrte zu Hause um 1500', *Historische Anthropologie* 13 (2005) 325–342; Gadi Algazi, 'Food for Thought: Hieronymus Wolf Grapples with the Scholarly Habitus', in: Rudolf Dekker (ed.*), Egodocuments in History: Autobiographical Writing in its Social Context since the Middle Ages* (Hilversum: Uitgeverij Verloren, 2002) 21–44; Gadi Algazi, 'Gelehrte Zerstreutheit und gelernte Vergeßlichkeit: Bemerkungen zu ihrer Rolle in der Herausbildung des Gelehrtenhabitus', in: Peter von Moos (ed.), *Der Fehltritt. Vergehen und Versehen in der Vormoderne* (Cologne: Böhlau Verlag, 2001) 235–250.

134 Heinz Schlaffer, *Poesie und Wissen: die Entstehung des ästhetischen Bewusstseins und der philologischen Erkenntnis* (Frankfurt am Main: Suhrkamp, 1990).

135 Herman Paul, '"Werken zoo lang het dag is": Sjablonen van een negentiende-eeuws geleerdenleven', in: L.J. Dorsman and P.J. Knegtmans (eds.), *De menselijke maat in de wetenschap: De geleerden(auto)biografie als bron voor de wetenschaps- en universiteitsgeschiedenis* (Hilversum: Uitgeverij Verloren, 2013) 53-73.

136 In earlier biographies, Newton's alleged absent-mindedness was indeed portrayed as virtuous, but in nineteenth-century biographies, anecdotes of aberrant social behaviour were presented as much more problematic: Yeo, 'Genius, Method and Morality', 273-274.

mindedness was not a marker of devotion, but a marker of distraction or, worse, insanity.

But why would men distance themselves from society in the first place? One reason could be an overly active imagination or an enthusiastic desire to occupy oneself solely with research, as we have seen earlier. It could also be a by-product of a desire for completeness or full accuracy. Another reason was the, often described as arduous or irksome, work of professional duties. Examinations at the universities, for example, were often seen as too time-consuming. In the case of the mathematician Isaac Todhunter (1820-1884), this work was described as 'a task requiring so much labour and involving so much interference with his work as an author that he never accepted it again.'[137] However, some men even embraced the distraction from original work by duties, from a desire to do good. This was recognised not as virtuous, but rather as giving in to the temptations of society, like in the case of Professor Rolleston, who was said to lack 'that intense concentration which is requisite for carrying out any continuous line of research. He was often blamed for undertaking so much and such diverse kinds of labour, so distracting to his scientific pursuits.'[138]

Nonetheless, universities and institutions could not function without men taking up these duties and it was generally accepted as a noble distraction from original work. In fact, in several cases, professional duties seemed even more important than original work, especially for senior figures, on whom the management and day-to-day business of important institutions depended. Frederick Evans, the engineer working on compass problems for the Admiralty, gradually grew in his role as administrator and, through tight time-management struck a balance between his love of science and his duty to society:

137 McFarlane, *Ten British Mathematicians*, 89; in the humanities, duties were often also seen as a burden: W.A.J. Archbold, 'Lord Acton as a Cambridge Professor', *Proceedings of the British Academy 1903-1904* (London 1904) 282-284, 283.

138 W.H.F., 'Rolleston', xxv.

> The multifarious calls of his new office, however, diverted him more and more from exclusive attention to his favourite science, though he still found time to draw up and read before the Royal Geographical Society in 1878, an able and instructive lecture on the Magnetism of the Earth.[139]

The physicist Rankine (1820-1872) and astronomer Stone, who both had administrative duties at scientific institutions, were also praised for balancing their research and societal duties.[140] Virtues of responsibility were even seen as checking the impulse to be absorbed in one's research.[141] A similar point was made concerning larger societal goals, as we have seen earlier, in the obituary of Fitzgerald, the brilliant mathematician who gave up his mathematical pursuits 'into lands too far removed from human traffic to be capable of utilisation and absorption for generations to come', and rather contributed to the betterment of general national education.[142]

A less noble distraction than duties or education was that of city life and high society.[143] John Ball (1818-1889), a broadly oriented amateur scientist, was negatively remembered for being 'as fond of society as society was of him, and he confided to a friend his belief that to this must be laid the blame of his not having done more scientific work.'[144] Like money and

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139 G.H.R. 'Evans', v

140 Rankine's 'great industry and success in the field of science were never allowed to interfere with the ordinary duties owing to society': 'William John Macquorn Rankine', Proceedings *of the Royal Society of London* 21 (1873) iv.

141 In Stone's case, responsibility prevented him from being absorbed by original work: 'One of Stone's most characteristic qualities was his great sense of responsibility and strict regard to official duty. However absorbing may have been the independent researches in which he was engaged, his official duties were at all times his first consideration.', see: D.G., 'Stone', xv.

142 See note 75 in this chapter.

143 Another, sadder source of temptation was intemperance. The mathematician Rowan Hamilton, who pioneered the study on quaternions, fell into the vicious habit to 'refresh himself with a quaff of the beverage for which Dublin is famous- porter labelled ': McFarlane, *Ten British Mathematicians,* 27.

144 Joseph Dalton Hooker, 'John Ball', *Proceedings of the Royal Society of London* 47 (1890) v-ix, ix.

fame, duties were seen as a legitimate aim of scholars –they all facilitated a friendly environment for the pursuit of knowledge– as long as a delicate balance was struck between the pursuit of knowledge and these external goods. Balancing between distraction and detachment was facilitated by feelings of responsibility, capacity to concentrate and the self-discipline to navigate the multifarious roles in a scientific life.

Remedy #1: balance

Above I have laid out the six dangers that Victorian and Edwardian obituarists regarded to be threats to the pursuit of knowledge. I argued that these dangers were clusters of concerns, not all similar in kind and in some cases overlapping. Nonetheless, distinguishing between these six dangers helps to demonstrate the complexity of Victorian and Edwardian perceptions of scholarly vice. They imagined the collective project of scholarship to be threatened from all sides, because the scholar was himself threatened from all sides: from within (e.g. desiring completeness over usefulness) and from without (e.g. being distracted). By publishing obituaries and maintaining a vivid culture of academic memory, scholars offered each other tools for dealing with the dangers of a scholarly life. In this section, I will discuss the first of two remedies: balance. Balancing virtues, desires, and duties was an antidote to vices and temptations.

Balance was so important, simply because imbalance was so often identified as a source of vice. Imbalance came in many forms. Firstly, Victorians and Edwardians feared excesses. These could be excesses in virtue: Acton's adherence to excessively high standards of accuracy and completeness or Roy's excessive ingenuity. Victorians also identified excesses that were more material: an excess of money, to follow Galton's analysis of Boulton, was dangerous because it could lead to amateurishness. Secondly, and equally problematic, were deficiencies. James Thomson was lamented for his 'want of rapidity of action', while John Percy was criticised for not guiding his readers enough. Insufficient modesty, George Romanes' case attests, was also seen as problematic. Material deficiencies were

also identified as dangerous: insufficient recognition led to Sophus Lie's depression.

Admittedly, excess and deficiency are two sides of the same coin. Acton's excessive accuracy led to insufficient usefulness, while Romanes' immodesty was due to excessive ambition. This is why I stated earlier that living a scholarly life was a delicate balancing act. Balancing virtues, commitments, and even material concerns such as money, fame, and duties towards society.[145] If danger indeed lay in imbalance, then the remedy was balance. Balance could be attained by cultivating virtues to contrast these excesses or deficiencies. The many cases that I have studied attest to this balancing act as a crucial remedy. There are many examples in the previous sections of scholars avoiding dangers by cultivating contrasting virtues, commitments or practices. The historian Gardiner, who balanced his interest for novelties with the value of existing scholarship, the mathematician Merrifield, who balanced his love of abstractions with a dedication to useful mathematics, the geologists Lyell and Scrope, who countered prejudice with boldness, sagacity and open-mindedness, and there are many more.

This balancing act was not easy: it took a great deal of self-discipline. As the case of Merrifield shows, danger could be avoided by pursuing objects of research that had less attraction but were more useful. A similar act of self-discipline was exhibited by Captain Evans (who worked on the Admiralty's compasses), who, when performing all kinds of professional duties, still found time to pursue his research. Scholars not only identified the sources of danger in academic memory culture, but also offered ways

145 For balancing virtues and commitments in German academia, see: Christiaan Engberts, 'Conflicting Virtues of Scholarship. Moral Economies in Late Nineteenth-Century German Academia' (PhD-dissertation, Leiden University, 2019) esp. chapter 5. For love of science in German academia, see: Rainer Kolk, 'Wahrheit – Methode – Charakter: Zur wissenschaftlichen Ethik der Germanistik im 19. Jahrhundert', *Internationales Archiv für Sozialgeschichte der deutschen Literatur* 14:1 (1989) 50-73.

of dealing with these dangers: balancing virtues through self-discipline.[146]

Remedy #2: a love of science

The second remedy against vices lay in what authors preferably referred to as a 'love of science'. Where the remedy of balance had more to do with countering excesses and deficiencies, the 'love of science' was envisioned to be more of a guiding principle, a compass to guide a scholar throughout his life. It was meant to keep scholars on the right track. As such, it was envisioned to be different in kind from the cultivation of specific constellations of virtues. The orientation of these constellations towards science, truth or knowledge was at stake.

I have mentioned examples in the above paragraphs, but I will add some more here, to illustrate how commonly phrases such as 'love of science' were applied. The Scottish chemist Thomas Graham, for example, was remembered for his 'intense desire' to understand the structure of matter[147], the Irish physicist George FitzGerald (1851-1901) was praised for being 'actuated solely by a love of truth'[148], the now largely forgotten English naturalist and minister Thomas Hincks was championed for his 'love of natural history'[149], while the well-known physicist David Brewster (1781-1858) was championed for his 'overpowering love of scientific pursuits'[150]

146 The importance of balance in the fight against vice was also supported by contemporary scientific evidence. In his famous *English Men of Science*, Francis Galton showcased his research into the 'character of a successful scientific man'. Crucially, Galton argued that character traits should be 'fairly balanced', and that excesses in one's character 'are dangerous gifts'. Galton's research shows that the ideals that were communicated in academic memory culture were not restricted to the genre of the obituary, but also played a role in broader scholarly discourse. Galton, *English Men of Science*, citations respectively on pages 230, 234 and 231.

147 R.A.S., 'Thomas Graham', xviii.

148 O.J.L. 'Fitzgerald', 158-159.

149 L.C.M., 'Rev. Thomas Hincks. 1818-1899', *Proceedings of the Royal Society of London* 75 (1905) 39-40, 39.

150 J.H.G., 'David Brewster', lxix.

and the famous historian Edward August Freeman for his 'love of truth'.[151]

In many obituaries, the 'love of science' or other closely related terms ('taste for science'[152], 'devotion to science'[153], 'love of truth'[154], and so on[155]) was put front and centre.[156] Think only of Sir Clement Le Neve Foster, who loved science over his own family, when he was suffocating in the mine and wrote letters to his colleagues, meticulously describing his own death. Or think of Arthur Cayley, who could have been a successful (and wealthy) barrister, but choose science instead. Cayley's obituary merits a closer look. It praised him for being:

> more than a mathematician. With a singleness of aim, which Wordsworth could have chosen for his 'Happy Warrior', he

151 James Bryce, 'Edward August Freeman', *English Historical Review* 8:27 (1892) 497-509, 503. The famous phrase 'history is past politics, and politics present history' is Freeman's. See: Ian Hesketh, ''History is Past Politics, and Politics Present History': Who Said It?', *Notes and Queries* 61:1 (2014) 105-108; and Herman Paul, ''History is Past Politics, and Politics Present History': When Did E. A. Freeman Coin this Phrase?', *Notes and Queries* 62:3 (2015) 436-438.

152 Francis Galton often used this synonym, see the coda to this chapter. In obituaries, 'taste for' was also used often, like in the obituary of Lord Armstrong, who had a 'taste for learning': A.N., 'Lord Armstrong', *Proceedings of the Royal Society of London* 75 (1905) 217-227, 217. More specific 'tastes' were also mentioned, like in the obituary of Alfred Richard Cecil Selwyn, who had a 'taste for geology': W.W., 'Alfred Richard Cecil Selwyn', *Proceedings of the Royal Society of London* 58 (1895) 325-328, 325.

153 See for example: 'John Allan Broun', *Proceedings of the Royal Society of London* 30 (1880) iii-vi, iii; and: W.T.T.D., 'Henry Trimen', *Proceedings of the Royal Society of London* 75 (1905) 161-165, 165.

154 See the obituary of George Francis Fitzgerald, mentioned earlier in the context of distraction, for an example: O.J.L., 'Fitzgerald', 159.

155 There were many ways to phrase this. William Stanley Jevons, for example, was remembered for having 'a pure and simple-hearted love for scientific labour': 'Jevons', ii.

156 This discourse also travelled beyond academic memory culture. In his autobiography, Charles Darwin himself reflected upon his growing 'love for science', that eventually 'preponderated over every other taste'. See: Charles Darwin, 'Autobiography', in: Francis Darwin (ed.), *The Life and Letters of Charles Darwin. Including an Autobiographical Chapter* (New York and London: D. Appleton and Company, 1911) 25-86, 53, other references to a love of science on pages 83, 85 and 86.

> persevered to the last in his nobly lived ideal. His life had a significant influence on those who knew him: they admired his character as much as they respected his genius: and they felt that, at his death, a great man had passed from the world.[157]

Note especially Cayley's 'singleness of aim' and the reference to William Wordsworth's (1770-1850) 'Happy Warrior'. In his poem 'Character of the Happy Warrior', Wordsworth describes this warrior-like figure as follows:

> And in himself possess his own desire;
>
> Who comprehends his trust, and to the same
>
> Keeps faithful with a singleness of aim;
>
> And therefore does not stoop, nor lie in wait
>
> For wealth, or honours, or for worldly state[158]

Although there is some irony in quoting Wordsworth to champion a scholar, referring to the 'Happy Warrior' underlined the noble (and masculine) character of a man like Cayley, whose high-minded desire for science was contrasted to worldly goods such as wealth, honours or a high position.[159]

What problem was the love of science meant to solve? Academic memory culture was rife with examples: Liebig loving his theories more than he loved science, Haughton craving sensation more than he craved science, and John Ball enjoying society more than he enjoyed the pursuit of knowledge. The love of science was meant to keep its practitioners on the straight and narrow path to truth.

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157 A.R.F., 'Cayley', xliii.

158 William Wordsworth, 'Character of the Happy Warrior', in: Charles W. Eliot (ed.) *English Poetry II: From Collins to Fitzgerald.* (New York, P.F. Collier & Son, 1909–1914).

159 On Wordsworth and his ambiguous relation to the project of science, see: Lloyd N. Jeffrey, 'Wordsworth and Science', *The South Central Bulletin* 27:4 (1967) 16-22.

Where balance was a remedy against excesses or deficiencies in virtue, love of science was a remedy to a wrongful orientation of these virtues. It guaranteed commitment to the scientific cause and served as a guiding principle.

Conclusion: six dangers, two remedies

In this chapter, I have presented the first analysis of British scholarly obituaries published between 1870 and 1910. In this corpus of obituaries, I found that Victorians and Edwardians distinguished between six dangers (uselessness, enthusiasm, prejudice, money, fame, and distraction) and two remedies (balance and a love of truth). I have also argued that the obituary should be seen as a genre of instruction, at least in the period and place that I have been studying. It helped Victorians and Edwardians to identify the dangers that beset the pursuit of knowledge, while at the same time it offered descriptions of how those ills could be remedied. The power of obituaries was that they offered context-rich accounts of scholars in action: showing which problems they encountered and how they bested them. In historiography, obituaries are attributed many different functions: representing science to society, community building, engaging with models of virtue, and serving as battlegrounds for competing views of science. My analysis thus suggests an additional function: instruction. Academic memory culture, in other words, taught the learned how they should deal with the dangers that threatened them from within and without.

Let me return briefly to the introduction to this dissertation, where I asked why vices were so important to Victorians and Edwardians. This chapter offers one answer: the language of vice was so important because scholars saw their pursuits as being constantly threatened by all kinds of dangers. This chapter has shown both how Victorians and Edwardians envisioned these dangers, and which remedies they identified. If we think of obituaries as instructions for dealing with these dangers, it comes as no surprise that the category of vice figures prominently in these sources: scholars needed to be actively warned about them, and be presented with

the remedies, if the collective project of scholarship was to succeed.

At the same time, this chapter suggests that although it was agreed that good scholarship was threatened by all kinds of dangers, there was scarce agreement about the aims, goals and methods of good scholarship. We have encountered some examples of disagreement about the goals of science in this chapter (think of Oman and Acton, or Tait and Haughton), but I will reserve a more thorough discussion of these themes for chapters 3 and 4.

A theme that must now be addressed, however, borders on the instructional value of obituaries. Where did Victorians and Edwardians learn that scholarship was a matter of balancing virtues and loving science in an effort to keep vices at bay at all costs? In other words: how were aspiring scholars socialised into the moral universe of late nineteenth-century British scholarship? Or, to put it yet another way: how was this moral universe built on broader Victorian and Edwardian conceptions of virtue and vice, and how could one transition from the one to the other? The following chapter will take up these questions.