the reading public—and some salient warnings about the reasonable limits of journalistic hyperbole.

Imaginative technological futurism never became the sole mode of writing on electrical topics; it supplemented and eclipsed traditional didacticism as the most popular mode of writing about technical subjects, if not necessarily the most credible. But ever since Stead’s endeavours in the 1890s, experts in science and technology have enjoyed the benefits of the precedents he created, enabling them to speculate about the future implications of their work without fear that they would necessarily be seen as breaching the boundaries of professional decorum.

Notes

5. Secord, Victorian Sensation, p. 351.


52. See also Secord, *Victorian Sensation*, pp. 437–70.


54. Louise Henson, 'In the Natural Course of Physical Things': Ghosts and Science in Charles Dickens's *All the Year Round*, in Henson et al., *Culture and Science*, pp. 113–23.


59. Editor [George Henry Lewes], 'Farewell Cauteristic', *Forthnightly Review* 6 (1866), 890–9 (890).

60. Editor [John Morley], 'Valedictory', *Forthnightly Review* n.s. 32 (1882), 511–21 (514).


65. Young, ‘Natural Theology’, pp. 128 and 156.
67. Louis Dudek, for instance, contends that the Review of Reviews, one of the leading organs of the new journalism, was ‘an excellent intellectual periodical’. Louis Dudek, Literature and the Press: A History of Printing, Printed Media, and Their Relation to Literature (Toronto: Ryerson, 1960), p. 117.
68. Klancher, English Reading Audiences, p. 4.
74. See, for example, Ellegard, General Reader; Desmond, Politics; Pietro Corsi, Science and Religion; Baden Powell and the Anglican Debate, 1800–1860 (Cambridge: Cambridge University Press, 1988); and Yeo, Defining Science.
75. Secord, Extraordinary Experiment; Secord, Victorian Sensation.
81. ‘The Quarterly Review (Just Published)’, Mirror of Literature 16 (1830), (306).
83. Mirror of Literature, 16 (1830), 303.

2. THE MIRROR OF LITERATURE, AMUSEMENT AND INSTRUCTION AND CHEAP MISCHELANIES IN EARLY NINETEENTH-CENTURY BRITAIN

3. The use of the term ’masses’ in the sense of an undivided populace dates from around this period, although the use of ‘mass’ to describe audiences or publications is later. See Raymond Williams, Keywords: A Vocabulary of Culture and Society (London: Fontana Press, 1988).
11. Athenaeum, 28 April 1832, p. 274. See also Athenaeum, 14 July 1832, p. 455, and 15 September 1832, pp. 60–4; and Literary Gazette, 22 February 1834, p. 136.
13. Mirror 5 (1825), iii.
14. The vast majority lasted only for a very short period; note that the rapid increase in the early 1820s is followed by a plateauing, and even a decline in 1826. The Gentleman’s Magazine noted that the financial crash of 1825–6 had affected the ‘Scissors and Paste-Man’ as well as the ‘Man of Genius’ (Gentleman’s Magazine 96 pt 1 (1826), iii). See also True Half-Penny Magazine 1 (1832), 1–2.


22. *Mirror 1* (1823), 32.

23. ‘Pioneer of Cheap Literature’, 1326; *Mirror 7* (1826), [iii].


29. *Mirror 3* (1824), iii.


34. Klancher, *English Reading Audiences*, p. 78.

35. Ibid., p. 96.


38. The older monthslies generally began with original contributions, proceeding to other named sections typically including book reviews, original poetry, and some form of historical register, containing home and foreign news, commercial, agricultural, and meteorological reports, and births, deaths, and marriages.


41. See, for instance, *Mirror 7* (1826), 192.


44. *Mirror 7* (1826), 52.


46. As Peter Murphy has shown, exclusively working-class periodicals were generally free from such classical quotations, allusions, or translations. Paul Thomas Murphy, *Towards a Working-Class Canon: Literary Criticism in British Working-Class Periodicals, 1826–1838* (Columbus: Ohio State University Press, 1994), p. 38.


49. Ibid., 162–4.

50. Ibid., 90.

51. Ibid., 459–60.

52. Ibid., 428–30.

53. *Mirror 7* (1826), 376.

54. See James Mussell, ‘“This is Ours and for Us”: The Mechanic’s Magazine and Low Scientific Culture in Regency London’, in *Sideline Science*, ed. by Martin Willis, David Clifford, and Elizabeth Wadge (London: Anthem Press, forthcoming).

55. *Mirror 3* (1824), iv.


57. *Mirror 4* (1824), 462.

58. Ibid., 397–8.


60. *Mirror 4* (1824), 4–5.


63. *Mirror 7* (1826), 416. See also ibid., 192.


69. Mirror (1822–23), iii.
77. Mirror 1 (1822–23), 113–14 (113); 129–30 (130); 145–6.
78. Mirror 7 (1826), 145; Alick, Shows, pp. 328–16; Fox, London, pp. 423–4.
80. Mirror 7 (1826), 146, 147.
81. Ibid., 148–52.
82. Ibid., 166–8, 178–9, 207, 217–18, 223–4, 238–9, 249.
84. Mirror 2 (1823), 259–61.
85. Mirror 6 (1825), 143–4.
86. See, for instance, Mirror 4 (1824), 314–15; this article, extracted from the New Monthly Magazine, was prefaced by a quotation from Gulliver's Travels describing the schemes of the Academy of Lagado.
87. Mirror 5 (1825), 54–5 (55).
88. Mirror 4 (1824), 310.
89. Mirror 5 (1825), 60–1.
90. Maidment, Into the 1820s, p. 9.
93. 'Pioneer of Cheap Literature', 1326.
96. Timbs, 'Autobiography', 396 and 614. Timbs's editorial duties began with number 275 of the journal, dated 29 September 1827. On Timbs's editorship see also Timbs, 'Thirty Years', 102, 158, and 622–3.
98. Mirror 9 (1827), 184.
100. On the move towards self-consciously 'popular science' in the weekly literary journals of this period see Holland and Miller, 'Science'.
101. Literary Gazette, 18 February 1832, p. 104.
102. Mirror 12 (1827), iv.

3. THE WESTLEYAN-METHODIST MAGAZINE AND RELIGIOUS MONTHLIES IN EARLY NINETEENTH-CENTURY BRITAIN


7. THE REVIEW OF REVIEWS AND THE NEW JOURNALISM IN
LATE-VICTORIAN BRITAIN

9. 'To All English-Speaking Folk', 15 and 18.
11. 'Programme', RR 1 (1890), 14.
12. 'To all English-Speaking Folk', 19; Matthew Arnold, 'Up to Easter', Nineteenth Century 21 (1887), 629–43 (638).
13. 'To My Readers', RR 1 (1890), 363.
18. 'To All English-speaking Folk', 15.
19. 'Programme', 14.
21. 'The Judgement of the Journalists', RR 1 (1890), 166–8 (166).
22. 'To My Readers', 361.
23. ‘Judgement of the Journalists’, 166.
32. See ibid., vol. 1, pp. 116–17, which prints a letter from January 1886 in which Huxley tells Knowles, ‘I shall send you the ms. of the *Evolution of Theology* to-day or to-morrow. It will not do to divide it, as I want the reader to have an apery of the whole process from Samuel of Israel to Sammey of Oxford. I am afraid it will make thirty or thirty-five pages ... Please have it set up in slip, though, as it is written after the manner of a judge’s charge.’
33. W. T. Stead to T. H. Huxley, 31 December 1899, Huxley Papers 27.3.
34. ‘Is “Progress and Poverty” a Fudge?’ *RR* 1 (1890), 128.
35. ‘Culture and Current Orthodoxy’, *RR* 2 (1890), 43.
37. *Index to the Periodical Literature of the World*, p. 28.
39. ‘Culture and Current Orthodoxy’, 43.
41. ‘Professor Huxley as Controversialist’, *RR* 2 (1890), 143.
42. T. H. Huxley, ‘The Lights of the Church and the Light of Science’, *Nineteenth Century* 28 (1890), 5–22 (21).
43. ‘The Nineteenth Century’, *RR* 2 (1890), 466–7 (467).
44. T. H. Huxley to W. T. Stead, 8 July 1890, Huxley Papers 27.5; T. H. Huxley to W. T. Stead, 9 July 1890, Huxley Papers 27.6.
50. ‘How We Intend to Study Borderland’, *Borderland* 1 (1893–4), 1–6 (1).
53. This was not, though, the first time that such a suggestion had been made in one of Stead’s journals. In January 1889, Huxley wrote to Stead complaining that “The * Pall Mall Gazette* of the 22nd December contains a quotation from a German newspaper, in which not only is it stated that I have taken part in a series of experiments, chiefly with the medium Home”, but it is pretty plainly suggested that I am disposed to judge what is called “Spiritualism” more or less favourably. The statement and the suggestion are alike erroneous.” *Pall Mall Gazette*, 1 January 1889, p. 1.
54. See T. H. Huxley to W. T. Stead, 21 June 1894, Huxley Papers 27.32.
56. ‘Prussian Annals’, *RR* 7 (1893), 53.
57. ‘Do Dead Men Dream?’, *RR* 1 (1890), 111.
67. ‘Mr. Grant Allen’, *RR* 1 (1890), 198.
71. ‘Our Welcome’, *RR* 1 (1890), 96–9 (99).
73. "To All English-Speaking Folk", 20.
74. "Government by Journalism", 673.
76. "Ten Years of Modern History", *RR* 20 (1899), advertising supplement.
80. 'The Rights of the Unborn', *RR* 12 (1895), 264.
81. 'Against Compulsory Motherhood', *RR* 11 (1895), 328–9 (328).
82. 'Government by Journalism', 673.
83. Quoted in "Judgement of the Journalists", 167.
86. 'One of the Notable Books of the Age-End', *RR* 11 (1895), 472–3 (472).
87. "Our Monthly Parcel of Books", *RR* 9 (1894), 522–6 (523); 'Ten Years of Modern History'.
88. G. Allen to W. T. Stead, 1890, Stead Papers, Churchill Archives Centre, Churchill College, Cambridge, fl. 1 ALS.
89. G. Allen to W. T. Stead, n.d., Stead Papers, fl. 5 TLS.
90. Grant Allen, 'Character Sketch. Professor Tyndall', *RR* 9 (1894), 21–6. On the proposed review of Darwin's *Autobiography*, see G. Allen to W. T. Stead, 6 October (1892), Stead Papers, fl. 4 ALS.
91. 'Cyclomania Morbus', *RR* 13 (1897), 157.
97. Salmon, 'Signs of Intimacy', 169.
100. *Pall Mall Gazette*, 4 October 1887, p. 13; *Pall Mall Gazette*, 6 October 1887, p. 7.
102. Stead, 'My System', 297.
104. Stead, 'Government by Journalism', 666.
105. A Word to Those Who are Willing to Help', *RR* 1 (1890), 53.
106. Some Pages of a Busy Life', *RR* 19 (1899), 357–43 (357).
110. Some Notable Books of the Month', *RR* 15 (1897), 593–600 (599).

8. Tickling Babies: Gender, Authority, and 'Baby Science'

3. Spencer has become legendary for his romantic rejection of Marian Evans (the future George Eliot) and his lifelong bachelor status.
4. Adolf Kussmaul, _Untersuchungen über das Seelenleben des Neugeborenen Menschen_ (Leipzig and Heidelberg, 1859). Lewes's heavily annotated copy of Kussmaul's tract is amongst his books at Dr Williams's Library, London.
5. The Kussmaul tract was reviewed in the _Zeitschrift für Rationale Medicin_ (Leipzig and Heidelberg, 1861), pp. 516–17 which is also in G. H. Lewes's books at Dr Williams's Library.
56. Sully, 'New Study', 731. In reworking this material for Studies of Childhood, Sully retained this passage, but excised a subsequent one where he notes that 'the child-lover, like other lovers, seeks the object of his love' (p. 731). Although the sensitivities which today surround the term 'child-love' were clearly not operative in the Victorian era, it is probable that this textual change was motivated by the sense that the analogy with romantic love undermined the vaunted objectivity of the male scientific observer.

57. Sully, 'New Study', 733.

58. Ibid., 735-6.

59. Ibid., 737. Sully’s difficulties in negotiating this gendered terrain are reflected in his rewriting of this passage for the book version, where women are simultaneously given a higher profile, but also more directly excluded from professional observation. See James Sully, Studies of Childhood (New edn: London: Longmans, Green, and Co., 1896), pp. 22-4.


62. For a list of British child-care and child-study periodicals from this period see Gurjeva, ‘Everyday Bourgeois Science’, p. 242.


64. Editorial Address, Baby 1 (1887), 13.

65. Francis Warner, ‘How to Observe a Baby’, Baby 1 (1887), 3-4. Warner went on to write a range of texts on child development, including The Study of Children and their School Training (1897), and The Nervous System of the Child (1900).


67. The emergence of scientific child study brought with it a whole new range of jargon to the vocabulary of child rearing, including the study of the mental and emotional development of children (1893-4); Paediatrics (the study of the nature of children, 1894); and Alexipharmacology (the study of the effects of drugs on children). The OED cites Sully in Harper’s Magazine (June 1889).


71. Similar anxieties regarding child research were recorded in the Lancet on 20 February 1897 in a report on the founding of a Manchester branch of the British Association of Child Study: ‘To those who had read the delightful essays of Professor Sully it was not necessary to explain the object of the society. During the last few months some of their candid friends had asked if they were going to experiment on newly-born babies — if they were going to put pepper on their tongues to try to find out at what exact period they appreciated these useful condiments. They were asked if they were going to repeat the experiments on the prehistoric faculty of infants in order to demonstrate their affinities with our lower relations, and if it was intended to make the nursery a temple and the baby an idol’ (555). This arch mode of reporting nonetheless conveys very well how deeply ingrained these iconic images of baby experimentation had become.

9. SCIENTIFIC BIOGRAPHY IN THE PERIODICAL PRESS


2. The Biographical Dictionary of the Society for the Diffusion of Useful Knowledge, ed. by G. Long, 4 vols. (London: SDUK, 1842-4). These volumes covered only the range Aa to Az!


5. The raw calculation was 60,000, but this figure is inflated because a proportion of entries are listed twice in the biography subject indexes — under both the author’s and the subject’s name. For example, John Whishaw, Some Account of the Late Smithson Tennant (London: Baldwin, 1815) is included twice — against the names of both Whishaw and Tennant. Also, many entries carry more than one NTSB subject index; hence, a specific book may be both a biography and a contribution to natural history. In order to correct for the latter overestimate I suggest that the key figure of 50,000 biographies provides us with a better estimate of the genre’s popularity. Among the many other issues raised by this statistical analysis is the inclusion of works that are not normally counted among biographies — for example, testimonials for scientists applying for university posts.

6. As indicated in the previous note many books are attributed with more than one subject classifier. Thus if we were to add all the percentage market shares for all subjects the total would be well in excess of 100 per cent.


14. Much of the discussion in this section is based on Altick, Lives and Letters.


19. Fraser’s Magazine 1 (1836), 224 and facing. A few months earlier Faraday had unintentionally fuelled Fraser’s campaign against the Whigs by (allegedly) refusing a pension from the Prime Minister, Lord Melbourne.


21. Youth’s Magazine; or, Evangelical Miscellany 10 (1837), 207–12; Friend 2 (1844), 197–8.


25. Nonconformist 27 (1867), 731.


30. On Faraday’s role in creating his own public image see several of the papers in Gooding and James, Faraday Rediscovered.


32. [William Frederick Pollock], ‘Faraday’, Fraser’s Magazine 1 (1870), 326–42 on 326.


42. The copy in Leeds University Library contains a manuscript note by Charles Thomas Whittwell who suggests an alternative epitaph: ‘The Newton of the Nineteenth Century’.

43. Munro, ‘Character Sketch’, passage.

44. Youth’s Magazine; or, Evangelical Miscellany 3rd ser. 1 (1828), 29–30; 3 (1830), 245–6; 4 (1831), 239–40. For a broader discussion see chapter 2, above.

45. ‘Memor of Mr. George Newton, of Thorncliff near Sheffield’, Wesleyan-Methodist Magazine, 3rd ser. 5 (1826), 725–34.
10. PROFIT AND PROPHECY: ELECTRICITY IN THE LATE-VICTORIAN PERIODICAL


4. Ismar Thuesen [pseud. John Macnie], The Diastas, Or, A Far Look Ahead (New York/London: Putnam, 1890), the second edition was published as Ismar Thuesen [pseud. John Macnie], Looking Forward or The Diastas (New York/London: Putnam, 1890), the quote is from p. iii. Without mentioning Looking Forward or its author by name, Macnie's preface to the second edition hints at possible plagiarism by Bellamy, while emphasizing the absence of 'socialistic doctrines' or 'new social gospel' in Looking Forward. Ismar Thuesen is the name given to the novel's narrator by his 19th-century interlocutors, his nineteenth-century naming being left unspecified. For more general discussion of science and technology in the history of US utopianism see Howard Segal, Technological Utopianism in American Culture (Chicago: Chicago University Press, 1985), and John Carey and John J. Quirk, 'The Mythos of the Electronic Revolution', American Scholar, 39 (1970), 219–41 and 395–424.


8. For the continuing interest in biography see Geoffrey Cantor's discussion in ch. 9.

9. As a wealthy landed aristocrat, the Eton-educated William Courts Keppel, Viscount Bury (1822–94), was able to make substantial investments in electrical industry in the 1880s and early 1890s. His previous career had been in military service, colonial duties in India and Canada, and parliamentary work as a Liberal (1866) then Conservative (1876). With a record of writing upon army and imperial duties in monographs and for Fraser's Magazine, Keppel's reputation in military matters was such that Disraeli appointed him Under-Secretary for War in 1878. For biographical details on Bury see 'Keppel, William Courts' in DNB, and obituary in The Times, 29 August 1894, 8f, which reported that he 'took a great interest in the problems of electricity'.

10. At a time when controversial homeopathic remedies were widely discussed in the periodical press (especially the Review of Reviews), Edith Faithfull told readers of the Contemporary Review that electrical therapy had reliably cured

11. For the alternative view that periodical readerships respond passively to the authoritative writing of electrical experts see Carolyn Marvin, When Old Technologies Were New: Thinking about Communications in the Late Nineteenth Century (Oxford: Oxford University Press, 1988).


13. Dawson, this book, ch. 5. Notwithstanding its name, the Fortnightly became a monthly publication from 1866.


15. William Courtis Keppel's Quarterly Review (heretofore QR articles are 'Modern Methods in Navigation and Naval Astronomy', QR 141 (1876), 137–70; 'Sir William and Caroline Herschel', QR 144 (1876), 323–52; 'Modern Philosophers on the Probable Age of the World', QR 142 (1876), 202–32; 'Geographical and Scientific Results of the Arctic Expedition', QR 143 (1877), 146–86; 'The Science of Electricity as Applied in Peace and War', QR 144 (1877), 138–79; 'The Aggression of Russia and the Duty of Great Britain', QR 145 (1878), 534–70; 'Recent and Future Arctic voyages', QR 150 (1880), 111–40.


17. Ibid., p. 110.


19. The title refers to Richard Callan, Handbook of Practical Telegraphy (London: Longmans, Green, Reader & Dyer, no year or edition specified. 1st edn 1866, most recent edition the 6th of 1874), and Heinrich Schellen, Der Elektronomatische Telegraph (Braunschweig: n.p., 5th edn, 1870), but no explicit evidence is given of their use in preparing the Quarterly text.


21. Ibid., 145. Readers were frequently reminded of what they should and should not be able to judge, e.g. 'the reader will now, we hope, follow us when we speak of the resistance of a wire, a battery, or an electric circuit of any kind' (152); 'Our readers are probably acquainted with the principle on which the signalling apparatus on land (telegraph) lines is constructed' (165); 'Those who have done us the favour of reading the earlier parts of the paper will understand what is meant by the resistance of a given circuit' (167).


26. Ibid., 103 and 105–6.

27. Alpemarle, 'Electrical Transmission of Power', Nineteenth Century 31 (1891), 73–89 (83). He referred to 1882 as 'the unlucky year' in which costly failure and 'bitter disappointment' had been the norm. Keppel had not only been elevated to become Seventeenth Duke of Alpemarle (February 1891), but he was also Chairman of the General Electric Power and Tramway Company that for two years had produced and operated electric launches on the Thames (see The Times obituary cited above).


29. Ibid., 444.

30. Gordon later wrote: 'less than two years ago, I wrote an article in the Quarterly Review in which, if I recollect rightly, I said that if dynamos of the future "will, we believe, rotate much more rapidly than at present; their speed will only be limited by their tendency to fly to pieces". Then my friends and I set to work to build a dynamo on the principle I had laid down in the Quarterly Review article ... 'Quoted in J. E. H. Gordon 'The Development of Electric Lighting', Journal of the Society of Arts 31 (1882–3), 778–87 (780). The actual text from the Quarterly somewhat misquoted here was: 'We believe [the speed of revolution] should only be limited by the strength of the wheel to resist the centrifugal force tending to make it fly to pieces. It is probable that the machines of the immediate future will be made much stronger and will revolve many times faster than at present time.' 'The Development of Electric Lighting', 444.


32. Ibid., 402.


34. [William Stead] 'Electricity in the Household', RR 1 (1890), 34.

35. 'Yet Another Utopia, by M Charles Secrétan', RR 1 (1890), 46. 'The Author of "Looking Backward": An Interview with Edward Bellamy', RR 1 (1890), 47.

36. 'The Genius of this Electric Age: Mr Edison and his Ideas', RR 1 (1890), 120.

37. 'The Future and What Hides in It — A Scientific Prophecy by Professor Thurston', RR 1 (1890), 115–16.

38. Ibid.
39. Ibid.
40. It will be seen that the author is not deeply imbued with the communistic ideas, so attractive to many. To become the well-fed slaves of an irresistible despotism with its hierarchy of walking deities, seems hardly the loftiest conceivable destiny for the human race. 'Looking Forward', p. iv.
41. Ibid.
42. 'Science and Conjecture', Spectator 67 (1891), 723–4 (723). See below, pp. 332–3, for further discussion.
45. Alice M. Gordon, 'The Development of Decorative Electricity', FR 49 (1891), 278–84; Graeme Gooday, 'I never will have the electric light in my house'; Alice Gordon and the gendered Periodical Representation of a Contentious New Technology', in Henson et al., Culture and Science, 173–85.
46. Stead, 'The Reviews Reviewed: The Fortnightly Review', RR 3 (1891), 165. For similar criticisms see 'Domestic Electric Light', Saturday Review 71 (1891), 453, discussed in Gooday, 'I never will have the electric light in my house'.
47. William Crookes, 'Electricity in Transit: From Plenum to Vacuum', Electrician 26 (1891) 323–7, 354–60, 389–2 (323 and 336). Towards the end of his lecture Crookes deliberately distanced himself from his controversial research relating to spiritualism two decades earlier: 'Science has emerged from its childish days. It has shed many delusions and impostures. It has discarded magic, alchemy and astrology. And certain pseudo-applications of electricity, with which this institution is little concerned, in their turn will pass into oblivion' (392).
48. Speech reported in 'Dinner of the Institution of Electrical Engineers', Electrician 28 (1891), 70–2 (70). In replying to comments by Sir George Gabriel Stokes, Crookes briefly explored some unsolved questions about the possible use of electricity in agriculture, curing disease, sterilizing water, and treating sewage. He concluded 'These are problems that may safely be left to the devices and inspiration of our electrical engineers... What is really in store in the way of future wonders is folded in "shady leaves of Destiny"' (71–2). Compare with the conclusion of Crookes's 'Some Possibilities of Electricity' discussed below. The quotation is a reference to a poem by Richard Crashaw (1612–49), 'Wishes to his Supposed Mistress'. William B. Turnbull (ed.), The Complete Works of Richard Crashaw (London: John Russell Smith, 1888), pp. 133–8 (133).
49. 'Science and Conjecture', 723–4.
52. Stead, 'The Reviews Reviewed', 182.
53. Carolyn Marvin suggests that 'Some Possibilities' instanitates a wider trend of expert literary endeavour of using the 'raw material' of scientific discovery to mix fantasy and reality in 'equal proportions of the familiar and novel' see When Old Technologies Were New, p. 156.
54. 'Notes', Electrician 28 (1892), 341–2.
56. In the August 1890 Stead commented on Revd S. J. Vaughan's account for the Dublin Review showing how to calculate the date of the final apocalypse, 'The Final Destiny of the Earth: A Curious Speculation', RR 2 (1890), 160. The following April, Stead abstracted from the Contemporary Review an account that showed how electrical technologies would bring but temporary respite from the Earth's predicted heat death in 2,200,000 AD: 'The Last Days of the Earth by M. Camille Flammarion', RR 3 (1891), 370. The constraints of space do not permit a more detailed discussion of this topic here.