Nineteenth Century Science Fiction

Experiments, Inventions, and Case Studies

Edited by
David Seed

Volume II: 1859–1900

NINETEENTH CENTURY SCIENCE FICTION

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INTRODUCTION

The present volume presents a selection of the British and American fiction which would evolve in the following century into science fiction. It offers examples of speculative fiction thematically grouped around scientific experiments and new developments in technology, frequently cast in the form of case studies. In common with many historians of the genre, it takes *Frankenstein* as the formative text for the complex interaction between literature and science throughout the nineteenth century. As Paul Alkon has argued, this fiction constantly balances scientific possibilities against their human cost, hence the recurrence of Gothic horror effects when these possibilities are given narrative embodiment.[1] To call the contents of this collection science fiction is obviously to use the term *avant la letter* and we shall see that there was a serial debate throughout the century over how to label this new emerging fiction. Even the term 'science' was shifting its meaning towards the modern sense from the 1830s onwards, 'scientist' having been coined by William Whewell in 1834.[2] This flux in terminology reflected a corresponding flux in narrative methods. The term 'scientifiction' was coined in 1926 by Hugo Gernsback and modified by him the following year into 'science fiction,' which increased in use over the decades that followed. More recently, the term has been applied retrospectively by critical historians even as far back as antiquity, but there is a broad consensus that the surge in scientific and technological developments in the early nineteenth century gave an impetus to speculative writing which accelerated towards the end of the century. New terms were tried for this kind of writing including 'scientific romance,' which, as Brian Stapleford has shown, was an adaptation of the French *'roman scientifique'* gaining currency in the wake of Jules Verne's popularity, applied in the 1880s by Charles Howard Hinton to brief speculative pieces sometimes in narrative, and later in the 1930s borrowed by H.G. Wells.[3] Another neologism, 'realistic romance,' was tried out unsuccessfully by the American novelist Edgar Fawcett, who explained that this signalled stories where 'the astonishing and peculiar are blent with possible and accountable.'[4] In fact, the term 'science-fiction' had been coined much earlier in 1851 by the English poet William Wilson in *A Little Earnest Book upon a Great Old Subject*. This hyphenated link between two disciplines sets a motif which runs throughout the present selection of material, which collectively invites the reader

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to consider possible interconnections between cultural fields previously taken to be quite separate. Wilson pleads for an inclusive breadth of mind which will not only recognise the poetry within the 'natural and mechanical sciences,' but which will also open up a whole new field of literary subjects (v. Appendix).

It has become the norm for historians of science fiction to extend that term back through the nineteenth century. Brian Aldiss opens his *Trillion Year Spree* (1986) with a discussion of Mary Shelley's *Frankenstein*, which he reads as reflecting the emergence of that genre out of the Gothic. In *The History of Science Fiction* (2005), Adam Roberts spreads his historical reach further backwards, but includes two detailed chapters on the nineteenth century that rescue a number of important writers from obscurity. Similarly, in his scholarly analyses of telepathy, the mummy's curse and Science Fiction history generally, Roger Luckhurst has demonstrated the complex interactions between literature and its whole cultural context. Indeed, the current expansion of the corpus of works which could be considered as proto-Science Fiction shows no sign of abating.

A repeated theme throughout the material in the present volume is the blurring of the border between fiction and science. Sometimes this involved tandem interests on the part of the author. The novelist Grant Allen, for instance, in 1877 published *Physiological Aesthetics*, a study inspired by Herbert Spenser, where he declared: 'I wish . . . to examine the Aesthetic Feelings as an intermediate link between the bodily senses and the higher emotions.'[5] The rhetoric of connectedness runs throughout the period. The American lawyer William Henry Rhodes designed his 1876 miscellany *Caxton's Book: A Collection of Essays, Poems, Tales and Sketches* as a protest against what he perceived as the cultural dominance of science, where he declares: 'our age ignores fancy, and deals exclusively in fact.'[6] In fact, he argues that literature shared with the sciences the common impulse 'I want to know.' From the same period, the critic Edward Dowden in his 1877 essay 'The Scientific Movement in Literature' explores the possibilities of literature engaging with the many new discoveries in astronomy and other fields, declaring: 'in an age of incoherent systems and dissolving faiths' enterprising writers might produce works reflecting 'the general conclusion that all human knowledge is relative.'[7] A major commentator on the relation of literature to science in the nineteenth century, Martin Willis has stressed that the two domains were nowhere near as separate as a reader might assume today and that 'the language of literature . . . was a vital part of the scientist's armoury in imagining the principles of the natural world and articulating that imaginative understanding to others.'[8]

Frankenstein opens the selection as a formative text of experimentation. Unlike most of these accounts, however, the narrative is taken over by the newly vitalised subject and the plot shifts into a drama of opposition between the creature and its creator. The novel sets a keynote for this volume in problematizing its own credibility. In his preface to the first edition, Percy Shelley declares that its central event 'has been supposed' by Erasmus Darwin and 'some of the physiological writers of Germany, as not of impossible occurrence.'[9] He continues by denying

'serious faith' in the occurrence, but then claims the speculative latitude of 'fancy,' as it were in between fact and fiction. The ensuing narrative is then framed by letters to England by the traveller Walton, who explains its provenance and records the death of Frankenstein and final disappearance of his creature. Walton thus serves as intermediary between the extraordinary and the familiar domesticity of his addressees, who of course are the readers. We shall see similar strategies of authentication and mediation recur throughout this selection.

Frankenstein also sets a keynote for later narratives in describing the quest to locate the 'principle of life,' variously designated as a 'magnetic principle' (Isabella Romer), 'vital principle' (Edward Bulwer-Lytton) or 'latent force' (Robert Cromie). The experimental impulse to uncover hitherto unknown agencies in Nature recurs throughout the century, often with the concomitant results outlined by Mary Shelley of the physical and mental costs of the undertaking, sometimes fatal to the experimenter.[10]

In his appropriation of Mary Shelley's subject in 'The New Frankenstein' (1838), Thomas Medwin surveys different scientific attempts to locate the boundaries between mind and matter, parodying the creative impulse at one point as producing merely a grotesque automaton. Throughout his narrative Medwin repeatedly draws our attention to how these attempts have found literary expression by figures ranging from the Romantic poets to Goethe. He sets up a serial meditation on metaphysics as a travelogue ranging through Europe and concluding at the Giza Necropolis as a place of human origin. In this piece, none of the experiments described are shown to succeed and the final act collapses into anticlimax when the whole account is revealed to be a dream. When he incorporated 'The New Frankenstein' into his 1843 novel *Lady Singleton*, Medwin increased the irony further by showing the narrator being rendered speechless by a seizure. Unable to comment further, his intellectual travelogue is swallowed up by the novel's main action, namely characters travelling across Europe; hence the significance of Medwin's subtitle, *The World As It Is*.

Many of the selections are case studies and in that respect were sometimes indistinguishable from scientific documents. As Jason Tougaw has shown, 'the case history shared narrative conventions with the novel to dramatize . . . the overdetermined relationship between sickness and health.'[11] Tougaw focuses specifically on the medical case history, but his comment applies equally well to scientific and later-nineteenth century legal case histories. These narratives usually revolve around an individual, incorporate scientific data, and present themselves as challenging the reader's presumptions about reality. Robert Louis Stevenson's choice of the epithet 'strange' in his account of Dr. Jekyll's case was strategic in appealing directly to the reader's curiosity, but it could also apply broadly to the selections here, which in their different ways present instances of the extraordinary. These texts offer instances of the interaction between science and fictional narrative, where the latter construct scenarios that repeatedly push against the reader's sense of what is possible.

In many cases, these narratives destabilise the borderland between fact and fiction. In 1826, for example, an alleged French news report carried an account of how the body of Roger Dodsworth, an English antiquary from the seventeenth century, had been discovered frozen in the Alps. The story ran that the body had been thawed and Dodsworth restored to life, causing such a flurry of press attention that Mary Shelley contributed to the debate in a piece written for the *New Monthly Magazine*, but not published until 1863. Her letter appears to further confirm the authenticity of this account of reanimation. Less ambiguously, in 1835, the New York journalist Richard Adams Locke ran a series of supposed news reports of life on the Moon, ostensibly based on the observations of the astronomer William Herschel. Locke claimed to authenticate his account through the mediation of a fictitious assistant of Herschel's and by claiming that his account was in fact copied from an Edinburgh journal, but his main stratagem was to transpose the solemn detail of a scientific report into the context of journalism.

From the same period, Edgar Allan Poe's famous 1845 tale 'The Facts in the Case of M. Valdemar' presented itself as such a convincing news report that many took it at face value, especially when it was reprinted anonymously with modified titles. With clear market savvy, Poe wrote its controversial reception into the opening of the tale itself, as if the latter had already been released to the public and 'excited discussion.' Within the same month of its original publication, it was reprinted in the *Broadway Journal*, then managed by Poe, with a note recognizing that the piece had 'given rise to some discussion – especially in regard to the truth or falsity of the statements made.' The editorial continues: 'It does not become *us*, of course to offer one word on the point at issue.'[12]

The tale was first published in an issue of the *American Review* which contained virtually all factual articles on subjects ranging from William Pitt to the Anti-Rent Movement in New York and the Spirit of Liberty.[13] It is possible that Poe's title and method were suggested by a recurring practice in the American *Phrenological Journal*, which ran a section called 'Cases and Facts' where experts presented instances of 'vision-seeing,' colour perception, cerebral development and similar subjects. Poe's key terms 'facts' and 'case' clearly imply a scientific record which the method of the tale develops. The 'magnetist' narrator gestures towards a back story of revelation leading to public controversy which anticipates the actual reception of the tale, but scrupulously offers the reader closely observed details throughout. He supplements his account with that of two doctors brought into the case and enlists the services of a third person to take notes, and thus by implication to keep the account objective. Even M. Valdemar himself willingly submits to the role of experimental subject.

In the light of all these validating procedures, it is not surprising that controversy raged over the veracity of the piece. The situation was further complicated by casual editorial practice which led to the title being modified a number of times, most strikingly in its 1846 British pamphlet title: *Mesmerism 'in articulo mortis': An Astounding and Horrifying Narrative, Shewing the Extraordinary Power of Mesmerism in Arresting the Progress of Death*.[14] A similar publication

followed Poe's 'Magnetic Revelation' (1844), which was part tale, part expository essay. Its reception anticipated that of the Valdemar tale in opinions being divided between acceptance (significantly by the *Phrenological Journal of Philadelphia*, which accepted it within that journal's 'magnetic occurrences') and scepticism. It too appeared in London as a pamphlet called *The Conversation of a Somnambule. Held Just before Death with his Magnetiser Edgar Allan Poe*. Unlike the other pamphlet, this title makes no attempt to anticipate the reader's reaction, but rather promises authentic revelation. After reading the tale of Valdemar, Elizabeth Barrett Browning famously testified to its power to convince when she wrote in a letter of April 1846 that Poe's tale was 'going the round of the newspapers, about mesmerism, throwing us all into most admired disorder, or dreadful doubts as to whether "it can be true," as the children say of ghost stories.'[15]

One way in which Poe dealt with some of the enquiries he received about 'The Facts' was to declare that '"The Valdemar Case" was hoax, of course,' in a letter of March 11, 1847. However, the debate will continue as to whether this statement can be taken at face value. There is no doubt over Poe's serious interest in mesmerism, and the tale puzzled its readers from his sheer skill at mimicking the tone, vocabulary and practices of non-fictional reports.

A strategy is followed repeatedly in this fiction of quietly challenging the reader's sense of reality by blurring differences between fictional and non-fictional texts, or by registering the author's difficulties in getting work published. The American writer Frederic B. Perkins introduced his 1877 collection of stories *Devil-Puzzlers and Other Studies* with a 'Chat by Way of a Preface,' where he reflected on the difference in the commercial value between a sketch and a story. More broadly, he examined the changing popularity of short fiction, citing Poe, Hawthorne and Hoffmann as excelling in that field. Perkins' tale of human automata appears here.

The Philadelphia physician Silas Weir Mitchell followed a different but related strategy in the opening of his initially anonymous 1866 narrative 'The Case of George Dedlow,' which carried a brief foreword which opened: 'The following notes of my own case have been declined on various pretexts by every medical journal to which I have offered them.'[16] Mitchell's piece, by his own account, was published by mistake, the manuscript being lent to a friend and then passed on to an editor. This reference to medical journals would have jarred with its actual appearance as the opening piece in the July 1866 issue of *The Atlantic Monthly*, whose subtitle was *A Magazine of Literature, Science, Art, and Politics*. Its multidisciplinary policy was reflected in the issue where the story first appeared. Fiction was a small minority and items included a piece on war surgery and other reports on the war. Its self-effacing opening frames the narrative with an explanation of the difficulties of its publication, but carefully finesses between its apparently non-scientific nature and its psychological dimension. The avoidance of medical terminology probably helped the story's reception. It was so widely believed as factual that a public collection for Dedlow was organised and visitors even came to the Philadelphia 'Stump Hospital' to meet him. Apart from its authenticity, the

story continues to be praised by medical professionals for its accurate depiction of the trauma of amputation, a 2009 commentator in *The Lancet* shrewdly noting that 'phantom limbs were related to broader problems of defining the boundaries of the self.'[17]

'The Case of George Dedlow' purports to be an autobiographical memoir from a war casualty. Dedlow serves as a medical officer in a Northern regiment during the American Civil War. On entering combat, he is wounded in his right arm and later loses his legs in a second wounding. As if that wasn't enough, his last arm has to be amputated when gangrene sets in. Recovering in hospital, he becomes estranged from himself as he has turned into a hybrid creature, part living and part dead, until a medium invites him to a séance where he supposedly makes contact with the spirit of his missing legs. This experience so inspires him that he rises and walks on his invisible legs. The result is a surge of hope, and the story concludes with him looking forward to the 'day when I shall rejoin the lost members of my corporeal family.' The play on 'members' evokes the body holistically as a family of limbs.[18] When introducing the 1900 reprint of this tale, Mitchell wryly noted it had been received enthusiastically by Spiritualists as confirming their beliefs. In fact, Spiritualist journals had considerable readership during and after the Civil War. One leading newspaper, the Boston-based *Banner of Light*, regularly carried a 'Message Department' containing communications from the spirits of dead soldiers. In that respect, Mitchell's narrative was doubly topical.[19]

The medium of a tale's first publication would have played a role in its credibility. The lawyer William Henry Rhodes (writing as 'Caxton') not only published in the *Sacramento Union* 'The Case of Summerfield' (1871), his tale of a scientist claiming to be able to set fire to the sea, but framed his account as a manuscript found among the effects of a deceased lawyer. In a similar spirit, his 1876 tale of preternatural vision, 'The Telescopic Eye,' first appeared in the *San Francisco Evening Post* as a 'leaf from a reporter's notebook,' in other words as a piece of reportage.

By the 1890s, the author L.T. Meade devised a method of composition for her tales of the extraordinary combining fiction and science, by collaborating with 'Robert Eustace' (Eustace Robert Barton, a qualified doctor) and 'Clifford Halifax,' the latter being Edgar Beaumont, a surgeon with the Metropolitan Police of London. Among other stories, they produced two collections of medical mysteries under the title *Stories from the Diary of a Doctor*, no doubt capitalizing on the then-popularity of the Sherlock Holmes stories. Introducing her 1898 collection *A Master of Mysteries*, Meade declared: 'I propose in these pages to relate the histories of certain queer events, enveloped at first in mystery, and apparently dark with portent, but, nevertheless, when grappled with in the true spirit of science, capable of explanation.'[20] Meade thus introduces mystery through discrepancies or anomalies within the implicit model of normality at the opening of each tale, before the narrative presents scientific analyses of each sequence whereby assumptions of normality are questioned.

In Meade's stories and throughout this collection, authors frequently base their narratives on different forms of dialogue, which are used to establish a speculative basis for those narratives. Most famously, Victor Frankenstein's willingness to accept the advice of his university tutor M. Waldman not only marks a turning point in his thinking, but also initiates the train of events which leads to his creation of the being who dominates the novel's action. His exchange with Waldman is straightforwardly that between a student and tutor, but Frankenstein's account balances disclosure against a reluctance to reveal the secret knowledge he has acquired.

The condition of dialogue is central to one of the earliest pieces included in this volume by the Scottish surgeon Robert Macnish. His 1826 novella 'The Metempsychosis' is narrated in the first person, with a high proportion of dialogue and comparatively little circumstantial description. From the very beginning, the narrator is jolted out of his assumptions of normality by being addressed as if he is a professor in the University of Gottingen. The narrative progresses by setting up a field of speech from different sources, often with absurd or farcical effects of contradiction. Frederick Stadt encounters a whole series of speakers who treat him as a professor, in other words deny his basic convictions of autonomy, appearance and status. The narrative foregrounds the speech of others, who all challenge Stadt's behaviour. The most trenchant of these speakers is a demonic individual who invites him to sign away his soul in blood, but 'The Metempsychosis' only flirts with the Gothic, ultimately situating Stadt firmly in his habitual reality. This 'little gentleman' asks the latter the ultimate question: 'are you perfectly satisfied that you are yourself, and nobody but yourself?'[21] Identity is thus posed as a central issue which has to be explored through dialogue, since the novella minimises physical description. In 1821 the novelist John Galt published an account of premature burial, 'The Buried Alive,' in the same journal as that used by Macnish, *Blackwood's Edinburgh Magazine*, and may have helped him shape the last episode of the novella, but there is a crucial difference of method between the two works. Galt narrates through a single voice, which creates his story's claustrophobia; whereas in the final climax Macnish's narrator relies on a professor of anatomy to explain how he has narrowly escaped being used as a specimen for dissection. Ultimately, Stadt functions as a personification of thoughtlessness which he finally manages to shake off, hence his resolving summary: 'I shall conclude with acknowledging that a strong change has been wrought in my opinions.'[22] 'The Metempsychosis' thus challenges assumptions about the singularity and stability of the self, as well as the borderline between life and death. It is a learning narrative, presenting an interplay between different voices in the narrator's consciousness.

Apart from such an interplay between voices, a narrative might set up an alternation between different parts of its text.

In their different ways, all the fiction gathered here focuses on the extraordinary. Edward Bulwer-Lytton even wrote this aspect into the otherwise uninformative title of his 1862 novel, *A Strange Story*. His preface revolves around the use of

the term 'romance' to suggest a narrative of the marvellous, which ironically does not match the scientific materialism of his narrator, the physician Allen Fenwick. In fact, Fenwick combines the roles of narrator and commentator, punctuating his account with quotations from a number of sources. Here, however, a second editorial voice begins to emerge, usually giving the sources of the quotations, but also examining Fenwick's inferences. At one point the discrepancies between two characters' accounts of events are highlighted, something which Fenwick misses. At another point we are given a better explanation of somnambulism than that offered by Fenwick. In short, we are given a serial commentary on the theoretical issues raised in the narrative, which not only suggests the shortcomings of the narrator but also encourages the reader to contextualise the narrative within the metaphysical debates of the period.

Throughout this collection, we shall see instances of authors destabilizing generic markers and other formal signs of their texts. Many first appeared anonymously, blanking out any indication of provenance. A smaller number used pseudonyms, with the same effect. Or titles might be ambiguous or even multiple. In 1895, mathematician Charles Howard Hinton published a novella in a volume entitled *Stella and an Unfinished Communication. Studies of the Unseen*. The first term names the protagonist in a realist manner, although we learn that she is invisible. The second title names the companion piece which focuses on a process of 'unlearning,' and the third suggests psychical analysis. The tensions between these titles induce uncertainty even before we begin reading and is strategic on Hinton's part in challenging the reader's presumed norms, which he proceeds to do throughout the volume.

Much of this fiction incorporates new scientific developments within its narratives. One of the most controversial of the new sciences was phrenology, which claimed that the shape of the skull could reveal an individual's character. It became the subject of heated controversy in Edinburgh in the 1810s and more generally throughout the early decades of the nineteenth century. One of its strongest proponents, George Combe, declared his conviction that rational consideration of its tenets would lead to acceptance. In 1830, he declared: 'Let us dismiss prejudice, and calmly listen to evidence and reason . . . let us enquire, examine, and decide.'[23] This kind of scrutiny is totally absent from the satirical portrait in John Trotter's *Travels in Phrenologasto* (1825), where phrenology has become elevated to a cultural dogma which cannot be questioned. The visitor to that regime realises to his embarrassment that he is being treated as a primitive by his hosts, because of his ignorance of that science.

In fact, phrenology occupied a complex shifting status throughout the nineteenth century, being debated as a science, incorporated into self-help books, and even appearing as a form of public entertainment. Henry Cockton's comic novel *The Life and Adventures of Valentine Vox the Ventriloquist* (1839) shows the protagonist attending a lecture on phrenology because he has nothing better to do. The episode is introduced by a mock paean of praise to that science. The chapter opens: 'What a beautiful science is that of Phrenology! In the whole range of

sciences, where is there one which is either so useful or so ornamental?'[24] Cockton here imitates the voice of a supporter ostensibly celebrating the science as a boon to mankind. However, when the professor begins his lecture, using as a prop the skull of a murderer, Valentine causes consternation by projecting his voice into the skull. At first the audience laughs at the incongruity, but then begins to doubt whether the skull has become possessed. Even the professor registers such doubts that his lecture has to be abandoned. In effect, Cockton has dramatised an encounter between two modes of theatre: the promotional lecture and the demonstration of ventriloquism. Valentine carries the day, not because of any truth value, but because he is the more able performer.

By the mid-century, phrenology had become assimilated into mainstream realist fiction, featuring in the novels of Dickens, Melville, and Charlotte Brontë, among others. In American novelist Fanny Fern's *Ruth Hall* (1855), the protagonist is achieving success as a businesswoman and is encouraged by her closest friend to undergo a phrenological reading despite her scepticism. This she does, where the professor in question declares: 'You have an unusually even head, madam, . . . Most of the faculties are fully developed' before launching into a whole character summary, which she dismisses as pure flattery.[25] The episode contrasts strikingly with Cockton's in being assimilated into middle-class domestic life, but no details are given of an actual physical investigation here.

In 1848, publisher John Ollivier brought out a pamphlet whose subtitle is important to note. *Phrenology; in Relation to the Novel, the Criticism, and the Drama* opens with the declared aim 'to discuss the comparative merits of a scientific and an *intuitive* apprehension of human character.' Phrenology will supply the first in supporting 'external world-observation'; literature the second as 'self-internal analysis.' The remainder of the booklet does not match this opening clarity, but what is more important is Ollivier's confidence that literature, particularly the novel, can convey the new science to the public. 'Never, as now,' he declares, 'did literature possess such opportunity of energetically influencing society.'[26]

Ollivier's optimism was far from shared by Oliver Wendell Holmes, who framed a discussion of phrenology in his Breakfast Table series within a general explanation of pseudo-sciences. In 1859, he recorded: 'Having been photographed, and stereographed, and chromatographed, or done in colours, it only remained to be phrenologized. A polite note from Messrs. Bumpus and Crane, requesting our attendance at their Physiological Emporium, was too tempting to be resisted.'[27] Holmes claims to be bemused by the sheer number of ways in which an individual can be measured and by the commercialism of the process, but was in reality much more supportive of the new technology than this suggests, being an ardent promoter of photography and stereography.

The second, more controversial new science reflecting a public fascination which lasted right through the nineteenth century was mesmerism, later hypnotism, which during the 1830s and 1840s became a central focus of cultural debate.[28] Martin Willis has stressed that it was a subject that challenged presumed norms of class, gender and legality, broadly fed by an investigative impulse.[29]

By the 1840s, this subject had become incorporated into fiction.

Joseph Holt Ingraham's 1843 story 'The Hand of Clay' is unusual in including the founder Anton Mesmer himself in the action. In this Romantic melodrama, a beautiful Italian aristocrat has had her hand severed after killing a rival. Mesmer helps a young sculptor to fashion a hand of clay, which miraculously becomes a 'living member' after his intervention. The reader is, however, reassured to be told finally that the storyteller had simply fallen asleep over a book about mesmerism, and after all it was dream.[30] The story is transitional with a conservative closure which implicitly leaves the reader's sense of reality unchallenged, whereas the vast majority of mesmeric narratives are embedded in the details of contemporary life and have ambiguous or open endings which do not close off the reader's speculative curiosity.

Isabella F. Romer uses the introduction to her 1841 novel *Sturmer: A Tale of Mesmerism* to bemoan the general ignorance of mesmerism in England and hostility towards it, declaring:

> it is strange, but true, that in this same enlightened country, prejudice and fanatical scruples (far more difficult assailants to contend with than mere ignorance) have arranged themselves in battle array against the introduction of this wonderful discovery as an auxiliary to the healing art.[31]

Romer's narrative opens in Saxony, but her introduction suggests that she designed it as a polemical work directed at English readers. The first demonstration of mesmerism's efficacy comes when the narrator saves a young woman from a terminal illness. However, the dialogue that follows with a local pastor is even more important in establishing the credentials of mesmerism and its practices, the latter being publicised through *The Zoist: A Journal of Cerebral Physiology and Mesmerism*, which ran from 1843 to 1856.

From the same decade but in a less didactic mode, Horace Smith's 'Mesmerism: A Mystery' (published in his collection *Love and Mesmerism*, 1845) describes the case of a country clergyman's daughter who is subject to epileptic seizures. Desperate to find a remedy, her father remembers a friend who is a professional mesmerist and weighs up the possible benefits of this treatment. Like Romer, Smith glances at the public standing of the practice, noting that 'London has its moral and religious as well as medical quacks.' In the event Jane is treated by this therapist who combines phrenology with mesmerism: 'he laid the finger of one hand on the organ of veneration, while, with the other, he directed passes towards his patient.'[32] The result is an induced state of rapture where Jane stands on tiptoe, raising her arms to the skies. Her treatment has succeeded in relieving her illness, but it is also a quasi-spiritual experience for Jane, whose trances are described as a 'sort of compromise between the natural and the supernatural.' This could stand as a description of the whole narrative, which veers towards the supernatural when Jane is experiencing visions of herself, her absent brother and others. Whether these are an 'optical freak' or the workings of her 'mental eye' is never resolved in Smith's narrative.[33]

Jane's treatment extends into an excited correspondence with her therapist, which relates closely to a central recurrent issue in the fiction of mesmerism. Throughout the century, the relation between the mesmerist and his subject was the subject of controversy. In Romer's narrative, the fascination of the mesmerist Sturmer with his patient Lolotte pulls against the latter's marriage, with the clear implication that the former rivals the latter. Again and again the mesmeric relationship is presented as latently sexual. This issue became explicit in 1845 with the publication in Boston of a pamphlet called *The Confessions of a Magnetiser, Being an Expose of Animal Magnetism by a Practical Magnetiser*. Here the Magnetiser rehearses some general aspects of mesmerism, but then admits:

> Reader, let me tell you that to be placed opposite a young and lovely female, who has subjugated herself to the process for the purpose of effecting a cure of some nervous affection or otherwise, to look into her gentle eyes, soft and beaming with confidence and trust, is singular entrancing.
>
> (p. 9)

The publication was met, within the year, by an indignant rejoinder by La Roy Sunderland called *'Confessions of a Magnetiser' Exposed!*, which dismissed the earlier pamphlet as scurrilous humbug.

The issue raised was that of the mesmerist's power, which might be exercised for sexual gratification, as in the anonymous 1891 novella *The Power of Mesmerism*, or for more general exploitation, as happens most famously in George Du Maurier's *Trilby* (serialised 1894, book 1895), where the eponymous heroine is an artist's model, managed by the sinister musician Svengali. In this novel performance is dramatised as a drama of the will; Svengali 'plays' Trilby as easily as his piano. However, in her 1863 story 'A Pair of Eyes; or, Modern Magic' (published anonymously in *Frank Leslie's Illustrated Newspaper*), Louisa May Alcott reverses the stereotype of the male mesmerist with a female victim. Here the artist narrator enlists a striking young woman as a model, paints her successfully, and then marries her. Even before marriage, however, he begins to register the powerful impact of his model's gaze induces a pleasant lethargy fatal to his painting. He recalls: 'I drifted away into a sea of blissful repose, where nothing disturbed me but a fragmentary dream that came and went.'[34] Pleasant initially, this sensation after marriage develops into a disabling loss of autonomy, which only becomes understandable when the painter comes across a medical book on 'magnetism.' Arthur Conan Doyle's later novella *The Parasite* (1894) performs an even more radical reversal. Narrated by the eccentric Professor Gilroy, the story recounts how the experimenter becomes himself the subject of experimentation when the mysterious West Indian Helen Penclosa subjects him to mesmeric trances in order to possess him romantically.

The earliest narratives of mesmerism normalise its practice through analogies with medical treatment. Even here, however, accounts are sometimes linked with

the occult, as witness Alcott's subtitle. Similarly, Percy Greg uses an archaic term to describe the clairvoyance of a young woman in 'A Seeress at Fault' (1862), whose faculty as registered by a mesmerist could be a 'power or disease.'[35] Framed within a context of exposing shams and frauds, the narrative apparently shows the clairvoyant's perception of a murder, but finally leaves it uncertain whether or not this was fantasy. Later in the century, writers like Ambrose Bierce ('The Realm of the Unreal') and Conan Doyle 'other' the subject of mesmerism as emanating from India. Over the following decades the range of situations broadened where mesmerism operates. Different aspects of mesmerism are explored in these varying contexts. For example, an anonymous account from 1860, 'Curious Mesmeric Experiences in California,' takes the form of a letter to a friend from a student of mesmerism who attempts to penetrate the consciousness of a convicted murderer.[36] In effect, the student's consciousness bifurcates into the perceptions of a 'foreign self' populated by the murderer and his scientific observing self, commenting on these experiences. The narrative takes us up to the point of execution, then follows a hiatus, partly explained by him being discovered in a swoon at the scene. Has he actually experienced dying and lived to tell his tale, or was the whole account a piece of self-delusion? The questions are left unresolved, as merely 'curious.'

Accounts of mesmerism frequently record a heightening of the visual sense. In his *Letters on Natural Magic* (1834), the scientist David Brewster declared that 'of all sciences, *Optics* is the most fertile in marvellous expedients.' Because 'the eye enjoys a boundless range of observation,' its actions suggest a realm of speculation without limits.[37] The oxymoronic tension in Brewster's title between materialism and the supernatural reflects his analytical drive to explain 'phantasms of the senses' in terms of physiognomy. Although his study was scientific, his letters were all explicitly addressed to Walter Scott, who had originally suggested the volume.

Where Brewster's discussion is filled with tropes of opening up an expanding visual field, the pioneer sociologist Harriet Martineau, an early champion of mesmerism, describes her experience of trance as a gradual loss of detail followed by a concentration of light. Diagnosed with a disabling uterine tumour in 1839, she turned to mesmerism as a possible curative. In her first session, she experienced a blurring of vision:

> till scarcely anything was left visible before my wide-opened eyes. First, the outlines of all objects were blurred; then a bust, standing on a pedestal in a strong light, melted quite away [other objects disappear until] one small picture, high up on the opposite wall, only remained visible – like a patch of phosphoric light.

The results were so beneficial that in 1844 Martineau published a series of 'Letters on Mesmerism,' then collected in book form publicizing its efficacy. She declared that 'the principle of life itself – that principle which is antagonistic to

disease – appears to be fortified by the mesmeric influence.'[38] For Martineau the process is benign and therapeutic. In Alcott's story, however, there is a power play at work where the model reverses her control by her artist husband. And this power of the will is revealed through her eyes:

> 'They were not mild, but fiery and keen . . . as the pupils dilated and the irids shone with a transparent lustre which varied with her varying words, and proved the existence of an ardent, imperious nature underneath the seeming snow.'[39] Her gaze becomes the subject of the reader's gaze, raising questions about how she will reveal her will.

One of the most inventive treatments of mesmerism in this period embeds its application within a tale of detection. Charles Warren Adams' *The Notting Hill Mystery* (1863, published under the name Charles Felix) is narrated primarily by Ralph Henderson, an insurance investigator, and the text assembles diary excerpts and depositions concerning an apparent death by poisoning, all as case evidence. Mesmerism is introduced as a therapy for his ill wife by a Yorkshireman named Anderton, specifically by a mysterious German practitioner known simply as Baron R – . Despite his attention, the wife dies, but not before suggestions are raised of her being poisoned. Mrs. Anderton's fate is the precursor of that of the Baron's wife, who appears to have been poisoned for financial gain. Henderson introduces mesmerism into his dossier only to dismiss it as an imposture, but as the narrative unfolds, it gradually gains credibility from accounts of its practice and even from a case quoted from *The Zoist* for October 1854. The Rev. Dr. R.A.F. Barrett attends a lady disabled by an illness which makes her lose her appetite. The particular feature selected from this case study is referred to as 'eating by deputy,' where the therapist consumes food and his subject registers nourishment as if she has eaten. Before one of her attacks, he records:

> 'During the time I ate something for her. She said, "Before you ate my stomach was contracted . . . now the stomach is its full size, and does not look shrunk, and part of the moisture is gone."
>
> I. 'But you could not *get nourishment* so.'
> A 'Yes; *I could get all my system wants*.'[40]

Here and elsewhere, words are selected and highlighted which bear on vicarious consumption. The quotation is one of the last in the novel; in other words, it succeeds the poisoning narrative and remains one of the most prominent fragments for the reader to process. The ultimate mystery – left unresolved – remains that of mesmerism itself.

The power play between mesmerist and subject persisted as a subject of controversy right to the end of the century. Arthur Conan Doyle makes this explicit in his 1884 story 'John Barrington Cowles' (collected in *The Captain of the Polestar*

and Other Tales, 1890) where the narrator and his eponymous friend are medical students, as was Conan Doyle himself. Here a famous German medium and mesmerist tells his audience:

> I have shown you . . . that a mesmerised subject is entirely dominated by the will of the mesmeriser. He loses all power of volition, and his very thoughts are such as are suggested to him by the master-mind. The same end may be attained without any preliminary process. A strong will can, simply by virtue of its strength, take possession of a weaker one, even at a distance, and can regulate the impulses and the actions of the owner of it.[41]

This process is dramatised when the mesmerist is so disturbed by the presence in his audience of someone with a stronger will that he has to abandon his lecture. The person in question is a beautiful young woman who is so attractive that she has 'mesmerised the mesmeriser.' She and Barrington Cowles become engaged, but when the narrator rejoins his friend, he is told that she is a 'vampire soul behind a lovely face.' Unable to deal with this, Barrington Cowles probably takes his own life. Conan Doyle leaves unspecified the exact process of this influence, which is designated a 'preternatural agency' in the story's introduction.

By the 1890s, Arthur Quiller-Couch had identified a category he labelled 'hypnotic fiction.' In a causerie occasioned by the publication of George Du Maurier's *Trilby* (1894–5), he complained that his 'first objection to these hypnotic tales is the terror they inspire.' He admits that 'hypnotism is a proved fact: people are hypnotized;' but then continues:

> hypnotism is not a delimited fact: nobody yet knows precisely its conditions or its effects; or, if the discovery has been made, it has certainly not yet found its way to the novelists. For them it is as yet chiefly a field of fancy. They invent vagaries for it as they invent ghosts.[42]

Quiller-Couch thus found himself caught between an acknowledgement of scientific advance and his irritation at its sensational uses by novelists.

A different tack was taken by W.L. Alden in a book column for *The Idler*, where he draws an analogy with Henry Cockton's *Valentine Vox* (1840) to predict a short shelf life for the new genre of hypnotic fiction. He argues that audiences used to believe that 'a ventriloquist spoke with his stomach instead of his throat, and could send his voice on excursions as remarkable as those of an Australian boomerang,' but then 'when people came to understand what ventriloquism really was, it ceased to be available for the purposes of the story-teller.' Then comes his warning: 'Hypnotism will have a similar fate.' Extrapolating from the origin of the term (literally 'belly-speaking') rather than the specifics of Cockton's novel, Alden rejects the plausibility of the Conan Doyle story just described and predicts: 'A few years more and the hypnotic story will be as obsolete as the ventriloquistic story.'[43] Alden projects a neat relation between scientific awareness and narrative

plausibility which simply does not match the complex evolution of stories of mesmerism throughout the century. Indeed, the visibility of its effects together with enduring uncertainty about its process probably help to explain its popularity.

One of the most striking technological developments of the century was electricity, and in her study of this field Stella Pratt-Smith argues that fiction and scientific writing were not separate in practice, but that they were 'similarly motivated by their authors' equal desires to investigate, to communicate and to explore creative possibilities.'[44] She demonstrates that electrical metaphors by the mid-century had become commonplace in fiction, usually evoking disturbance, a life-force or the mysterious nature of electricity.

Frankenstein of course was partly inspired by experiments applying electricity for reviving subjects who had drowned or suffered seizures. More broadly, electricity was used to explore the boundaries of life itself. In his ironic sequel to Mary Shelley's novel, 'The New Frankenstein,' Thomas Medwin parodied Andrew Crosse's experiments in the mid-1830s to create insect life forms by dropping liquid on electrified stones. Surveying these experiments in the first half of the nineteenth century, Iwan Rhys Morus argues that 'producing life by electricity was nothing more than a parody of nature.' However, his preliminary proviso has implications for most of the narratives collected in the present volume when he declares that 'the practice of experimental natural philosophy during this period was not a straightforward enterprise with clear-cut boundaries and protocols.'[45] In short, the boundaries of scientific practice were blurred in many ways.

By mid-century, electricity had been identified by American spiritualist and mesmerist John Bovee Dods as nothing less than the 'connecting link between *mind* and *matter*.' In his 1851 collection of lectures on *The Philosophy of Electrical Psychology*, he further elaborates that electricity is the 'grand agent employed by the Creator to move and govern the universe.'[46] Dods' attempts to straddle science and religion are reflected in his choice of a hybrid label for what he sees as a new discipline. It was a clear indicator of the cultural impact of the telegraph that as early as 1848 comments began to appear on how it was affecting language use. In his essay 'The Influence of the Telegraph Upon Literature,' New York lawyer Conrad Swackhamer declared:

> The complicated periods which were once so much in vogue – the sentence within sentence, armed with all the paraphernalia of comma, semicolon, colon and dash, and dragging their slow length over almost an entire page before the "full stop" put a period at once to their existence and the reader's perplexity – have been gradually disappearing – having either fallen to pieces from their own clumsy construction, or been shattered by the critic's hammer.[47]

Speed and simplicity are clearly emerging as new prime values in communication. By 1877, William John Johnston's *Lightning Flashes and Electric Dashes* collects examples of 'telegraphic literature,' including a narrative by an operator

who claimed that she was having an out of body experience: 'I used to close my eyes, and imagine that I was soaring away through endless space to a far brighter and more enchanting world than this.'[48] In 1879, Ella Cheever Thayer's *Wired Love: A Romance of Dots and Dashes* explores the idioms of the telegraph medium in shaping a romance between operators. Opening its text with a Morse signal is symptomatic of this novel's experimentation with typography, the code-names of operators and the jargon terms of its equipment. Once again speed is paramount, and the novel even implies its own obsolescence before this new technology. By the time of Bram Stoker's *Dracula* (1897), means of communication had become an integral part of the narrative, which is refracted through journals, letters, telegrams and shorthand records.

In 1878, Mark Twain originally wrote a section on 'mental telegraphy' into *A Tramp Abroad*, but then removed it because he feared that readers would treat it as a joke. He returned to the subject in *Harper's Magazine* in 1891, when he declared his conviction that 'one human mind (still inhabiting the flesh) can communicate with another, over any sort of distance.'[49] Twain links the phenomenon to telepathy and the investigations of the Society for Psychical Research in Britain. He is careful to exclude the occult and spiritualism from his discussion of apparently instantaneous passage of thought from one mind to another. In his attempt to pin down this faculty he draws on current technology in positing a transmission and reception of messages. Indeed, he even posits a device called a 'phrenophone,' by analogy with the telephone, literally a 'mind-voice,' on the basis that 'doubtless the something which conveys our thoughts through the air from brain to brain is a finer and subtler form of electricity.'[50]

Electricity in general tended to be depicted as a life force, as in William Harrison Ainsworth's 1850 novel *Auriol, or the Elixir of Life*, where it still carries associations with the occult. In Bulwer-Lytton's *A Strange Story* (1862), the narrator Fenwick keeps a battery in his workshop to help his experiments. In Bulwer-Lytton's *The Coming Race* (1871), the subterranean race of the future possesses a force called 'vril' which can be used as a weapon or for healing. He made the origin of this concept explicit in 1870 when he explained to his editor John Forster:

> I did not mean Vril for mesmerism, but for electricity, developed into uses as yet only dimly guessed, including whatever there may be genuine in mesmerism, which I hold to be a mere branch current of the one great fluid pervading all nature.[51]

Vril is administered through a staff, which resembles a musical instrument. Equally broad was the evocation in Benjamin Lumley's *Another World* (1873) of 'electricities' in the plural. Set on another planet, the novel takes as a premise the proposition that 'everything organic or inorganic possesses an electricity of its own, each kind differing from the others in one or more important properties.'[52] Lumley suggests that electricity emerges from nature, and both he and

Bulwer-Lytton use alternative worlds to speculate on possible future applications of electricity.

Applications of electricity through devices which were clearly extending the senses of sight and sound raised questions about the relation between humans and machines. By the early nineteenth century, the term 'automaton' had usually taken on the negative connotation of a mechanical device with a human shape. In 1847, Jane Eyre protests to Mr. Rochester: "Do you think I am an automaton? – a machine without feelings?"[53] In the examples described through the century a repeated question kept arising: how closely do these devices simulate human activity? Or, to rephrase it slightly, what is the difference between a human and a machine? Poe glanced at this question in 1846 when reviewing Julius Faber's speaking automaton, commenting: 'there remains only one achievement – a machine to think.'[54] Commentators on nineteenth-century automata narratives have noted that 'for the first time, literary works focused not as much on the objective phenomenon of the automaton per se, but rather on the subject's psychological reaction to viewing such clever imitations of life.'[55]

The 1870s were a pivotal decade in this immediate context, because Thomas Henry Huxley published his paper 'On the Hypothesis that Animals are Automata' in 1874. If 'animals' is taken to include humans, the article can be seen as a crucial document in the debate over human identity. In 1878, Julian Hawthorne, son of Nathaniel, published his story 'An Automatic Enigma,' which can be taken as directly growing out of this debate, since Hawthorne reviewed Huxley's paper as soon as it was published. In the story, a life-sized automaton manufactured in Utrecht is brought to a small New England town so realistic that 'it was next to impossible to detect where life ended and mechanism began.'[56] Hawthorne positions the reader in the audience where the automaton is exhibited, focusing on its effect rather than its technology or the details of its appearance. The narrative ends abruptly when the automaton disappears, apparently having run away with a young local girl. Or did it? Nothing is resolved and the narrative recedes into local speculation.

No such ambiguity informs Edward S. Ellis's archetypal dime novel *The Steam Man of the Prairies* (1868, also known as *The Huge Hunter*), which describes an enormous human-shaped automaton designed to travel at speed and haul loads. In the USA, this work started a whole series of Frank Reade novels named after their serial protagonist. These boys' adventure stories revolved around constant physical action and new technological and imperial inventions which by the 1890s had come to include not only electrified boats and stagecoaches, but also an electric man, similarly huge and similarly powerful in fighting the natives of Australia.[57]

Apart from these dime novels, by the end of the century stories of automata had often come to revolve around malfunction, with satirical implications. Jerome K. Jerome's 'The Dancing Partner' (1893), for example, describes how a Black Forest mechanic devises a male automaton to relieve local girls' annoyance with the stereotypical talk of their dance partners. We are told of the device that 'it revolved steadily, pouring forth at the same time a constant flow of

squeaky conversation, broken by brief intervals of grinding silence.'[58] If anything, the automaton embodies the actual tedium of the dance floor, then turns into a positive danger when it accelerates out of control. Alice W. Fuller similarly deploys male-directed irony in 'A Wife Manufactured to Order' (1895), where a man thinks he has been offered a perfect wife, who is not only beautiful but who works through voice tubes which can be triggered to give desired verbal responses. In this case, the automaton doesn't malfunction but rather works only too well as her responses jar with her owner's financial difficulties. Right from the beginning, the story implies the gullibility of the focal character in purchasing the device from a Mr. Marker, whose name implies the role of con man.[59] The same irony informs George Haven Putnam's 1894 story 'The Artificial Mother,' which is dedicated 'to the oppressed husbands and fathers of the land.' This particular husband constructs a substitute mother out of an artist's lay figure, in itself suggesting that fantasy rather than technology is fuelling the device – which eventually breaks down into its different parts.[60] Two final examples from the same period demonstrate a combination of the desire for efficiency against gender issues and the persistence of showmanship. The eponymous inventor in Elizabeth Whitfield Croom's 1899 story 'Ely's Automated Housemaid' circulates flyers advertising 'An Automatic Household Beneficent Genius – A Practical Realization of the Fabled Familiar of the Middle Ages.' Two devices are ordered to perform the functions of housemaid and cook and are controlled through battery-driven dial-plates. They function only too efficiently at first, but then can't be controlled in mind-task and even conflict with each other.[61] The inventor is the narrator's husband in M.L. Campbell's 'The Automatic Maid-of-All Work. A Possible Tale of the near Future' (1893).[62] Here the weaknesses of the automaton directly reflect the careless habits of the husband, and once again the device runs out of control.

The ironies in the tales just considered are satirical and easy to identify, whereas Ambrose Bierce's 1899 story 'Moxon's Master' is a much more nuanced and complex narrative that engages with the whole issue of how machines relate to humans. It opens with an explicit dialogue between the narrator and Moxon on the nature of machines and the limits to sentience, where the latter even insists on the 'consciousness of plants.' Sounds are heard in an adjoining room; from a person (the narrator) or a machine (Moxon)? This uncertainty runs throughout the story, where the narrator's comments are conjectural. In the second scene the chess game is lit only by a single candle (whereas the historical chess player was brightly lit), the automaton is compared to a gorilla (animal or human?) and wears a fez (Eastern or Western?). Each new fragment of narrative data introduces new uncertainties, building up to the climax. Maelzel's chess player would strike the board if a false move was made. Bierce's automaton does the same, but for that same reason? And how does it spring to its feet? When throttling Moxon, the candle is knocked over, but instead of plunging the scene into darkness, the narrator records a flash of light. In the coda he attempts to get confirmation that he has seen a machine killing its master, but yet again this is not final. In short, the

tale raises and then leaves unresolved the very nature of automata and the extent of their autonomy.

By the 1890s, narratives would describe not only inventions but the commercial process of their application. In his 1893 story 'The Memory Clearing House,' Israel Zangwill describes a man who is annoyed by the persistence of memory long after it has ceased to be useful. He dreams of a process of thought transference which 'will make a new epoch, it will effect a greater economy of human force than all the machines under the sun.' He finally creates and names his new device:

> I shall christen it the noemagraph or thought-writer. The impression is received on a sensitized plate which acts as a medium between two minds. The brow of the purchaser is pressed against the plate, through which a current of electricity is then passed.[63]

Once again, we can see a diversity of terms which combine force measurement with an electrical process that connects with and transfers minds, and of course 'medium' combines physical means with connotations of the psychic. The invention is patented and mass-produced along with a 'Memories for Sale' catalogue. In fact, commercial success seems guaranteed until the inventor unwittingly acquires the memory of a murderer. The story concludes with him imprisoned and waiting for his execution.

Zangwill's inventor was concerned with extending the limits of consciousness through technological means. This notion of extension figures throughout much of this fiction, often with respect to vision.

Florence McLandburgh's 1873 story 'The Automaton Ear' describes an experiment in extrapolation which yet again rebounds against its scientist narrator. A college professor speculates that since 'men had constructed implements which could magnify to the eye,' surely it might be possible to do the same for the ear.[64] He constructs a 'funnel,' but without taking into account the sheer welter of sounds occurring at any given moment. Only after he refines the device to incorporate a volume control and one focusing on particular time periods does he feel that he has succeeded. However, when he tries the new device out on a local deaf mute, she attempts to steal it. In his fury, the inventor strangles her – fatally as he imagines.

The climax to the story comes not at a point of scientific achievement, but at the moment when he registers release from his 'monomania,' a nineteenth-century term for the pathology of an *idee fixe*.[65]

Magnifying the eye could lead to new discoveries in microscopy. Fitz-James O'Brien's 'The Diamond Lens' (1858), for example, draws on the excitement over domain discovery expressed by William B. Carpenter in *The Microscope and Its Revelations* (1856), where he declares: 'the Universe which the Microscope brings under our ken seems as unbounded in its limits as that whose remotest depths the Telescope will vainly attempt to fathom;' and Carpenter could already record the use of the microscope 'both as an instrument of scientific research' and

as a means of 'healthful recreation.'[66] In his 1846 lecture 'How to Study Natural History,' Charles Kingsley even saw the microscope as challenging the inventiveness of the literary classics when he declared: 'in one spoonful of water behold a whole "Divina Commedia" of living forms, more fantastic a thousand times than those which Dante peopled his unseen world.'[67] Laura Fosberg has usefully contextualised O'Brien's story within a mid-century convergence of interests in the literature of microscopy and the fairy fantastic.[68] O'Brien's narrator is of course an adult and the story ironically recounts his yielding to the erotic fantasy triggered by his discovery of a beautiful creature in her microworld. By a double irony, he even admits the self-indulgence of his early enthusiasm when he records: 'It was no scientific thirst that at this time filled my mind. It was the pure enjoyment of a poet to whom a world of wonders has been disclosed.'[69] The whole story revolves around the tension between his childlike sense of wonderment and his extensive scientific research. It is at least as much a case study as an account of scientific experiments.

Case histories were usually published to suggest further insights into pathological conditions, and a number of the works collected here speculatively imitated that purpose by disturbing the reader's assumptions about reality. Frequently this resulted in an ambiguity about the narrative being presented. Was it true or fiction? This kind of uncertainty is exploited in George Eliot's 1859 novella 'The Lifted Veil,' where narrator Latimer attempts to combine the role of investigator and experimental subject. In his youth, a phrenologist diagnoses a problem with the sides of his head, but Latimer takes over the role of scrutineer, presenting his account as his own case history. His preamble startles us with its account of precognition when he foresees his own demise as a sinking into darkness but without termination: 'always with a sense of moving onwards . . .' He then shifts from prediction into recollection, explaining his apparent facility for distant viewing and penetrating the thoughts of others, all of which draws on the expectations of revelation set up by Eliot's title.

Grant Allen's 1881 tale 'Pausodyne: A Great Chemical Discovery' (collected in Newton 2022) appears to announce a revolutionary new medication, but actually describes the total disorientation of a scientist who has lived since 1781 in a state of suspended animation after consuming a liquid prepared from the Alchemilla plant. Pronounced insane by the authorities, he jumps to his death in the Thames. The story ends with the narrator frankly admitting his inability to prove or disprove the account given him by the time traveller.

The most famous instance of a fictional case history is R.L. Stevenson's *The Strange Case of Dr. Jekyll and Mr. Hyde* (1886).

There had been an ambiguity of referent in the term 'case,' which could refer either to a clinical subject or to the physician presenting it to the public. Stevenson's novel conflates both senses through Dr Jekyll's failed attempts at purging his bestial self. Mr. Hyde is at once an atavistic projection of his psyche, scrutinised by his own creator. The novel recounts a failed scientific experiment. Within its spatial symbolism, the most secret part of Jekyll's house is its laboratory

and surgical theatre. Two years after the novel appeared, Stevenson published an essay, 'Pulvis et Umbra,' which examined the disturbing ways in which modern science was destabilizing conventional perceptions of reality. He declares: 'Of all the Kosmos in the last resort, science reports many doubtful things and all of them appalling . . . science carries us into zones of speculation, where there is no habitable city for the mind of man.'[70] Deploying the same trope as the novel, Stevenson implies that science literally displaces humanity from experiential norms. Dr. Jekyll loses his capacity for social interaction and attempts a summary statement of his experiences in a form which combines legal deposition and medical record, appropriately mediated through his friend the lawyer Utterson. Indeed, the novel opens as a legal case narrative and finally modulates into a pathological case study, a clinical self-diagnosis, where the reader enters the consciousness of a scientific experimenter. It is ironic but not surprising that the case of Jekyll and Hyde should be incorporated not only into medical record but also into the debate which broke out over Jack the Ripper in 1888. The authenticity of Stevenson's narrative was even recognised in Oscar Wilde's 1889 dialogue 'The Decay of Lying,' where Vivian declares that 'the transformation of Dr. Jekyll reads dangerously like an experiment out of the *Lancet*.'[71]

Again and again in this fiction, questions are raised about the ethics of experiments and practice of conducting experiments, especially those involving blood. Probably the earliest narrative to deal with blood transfusions was William Godwin, Jr.'s *Transfusion: The Orphans of Unwalden* (1835, also called *The Orphans of Unwalden; or, The Soul's Transfusion*), which set a pattern in depicting the experiment as an invasion of the bounds of the self. Here Godwin, the son of the philosopher and novelist, gives no details of the experiment itself, but shows how the search for their absent parents by the eponymous orphans – Albert and Madeline – culminates in a merging of their selves. Terminally ill, Madeline finally expires, but 'the informing spirit of her brother, healthy and entire, had entered her frame.'[72] The novel predates most fictional accounts of experiments where details of setting, equipment and procedure enable the reader to visualise the event. It also signals the process of transfusion as a taboo, emphasising darkness in the scene where it takes place and hinting at the sexual dimension to Albert's entry to his sister's organs. The gendering of this action is repeated in the transfusion coda to George Eliot's 'The Lifted Veil,' where the subject is a female servant, apparently brought back from the dead by the operation, but transformed into a figure of aggression.

In their depiction of extraordinary events, texts could shift genre disconcertingly as they progressed, which is what happens in William Delisle Hay's *Blood: A Tragic Tale* (1888). Here a physician of independent means called Cornelius Staggall becomes fired with enthusiasm by new pioneering medical practices he witnesses in the USA. He determines to try these out on his niece Luris, who is suffering from a mysterious wasting illness. His susceptibility to her beautiful 'appendages,' however, eroticises their relationship and he admits lapsing into an obsessive monomania. He devises a transfusion experiment using an Australian

man as donor, for which both subjects have to be put into a mesmeric trance. Steggall himself loses consciousness during the procedure and when he awakes, he finds Luris literally bursting with newfound vitality, but the donor dead. From this point on, the narrative shifts again from scientific exploration leading to romance into the crime genre with an account of the investigation of the donor's murder and Steggall's eventual conviction.

Like Godwin, Hay similarly plays on the possibility of selves merging in *Blood*, where the true protagonist is the vital fluid itself. From the same period, Scottish novelist J. Maclaren Cobban extended the concept of transfusion in his 1890 novel *Master of His Fate*, where Dr. Lefevre, a London physician, becomes fascinated by reported cases of individuals suddenly losing their vitality. He encounters Julius Courtney, a young scientist who is trying to locate what he calls 'the spirit of life.' This enthusiasm becomes contagious and Lefevre speculates: *'Why should there not be Transfusion of Nervous Force, Ether, or Electricity, just as there is Transfusion of Blood?'*[73] The scientific focus here alternates between animal magnetism and extending transfusion, the latter partly conveyed through the Gothic theme of psychic vampirism as Courtney attempts to prolong his life by consuming the vitality of his victims. Ultimately, he fails and kills himself, and so yet again scientific enquiry is shown to be morally problematic.

Indeed, scientists in this fiction are repeatedly seen as being as concerned with their own status and ego as with their supposed pursuit of science. This became a particularly charged issue in the controversy over vivisection. The very title of Wilkie Collins' 1883 novel *Heart and Science* signals a polarity which is dramatised through his London vivisectionist Dr. Benjulia. Initially the latter follows the simple imperative 'All for Knowledge! all for Knowledge!' however much his animals suffer, but the novel gradually brings his methods so much into question that he finally destroys his laboratory and takes his own life.[74]

In H.G. Wells' *The Island of Doctor Moreau* (1896), the laboratory has become a whole island domain for unfettered experimentation. When narrator Prendick finds himself on Moreau's island, he has become embedded in an alien space where the distance is lost between the observer and the processes of experimentation. The strange creatures he encounters undermine all his presumptions about species identity. When Moreau finally explains his experiments to Prendick, he claims the authority of 'true research,' meaning experimentation unfettered by legal or moral restraints. In 1884, anti-vivisectionist Frances Power Cobbe declared that 'science is undoubtedly at this hour the ruling passion of the age,' but her assertion could stand as a comment on most of the century.[75] Moreau behaves like a latter-day Frankenstein informed by Darwinian evolutionism when he boasts to Prendick of the moment when he made his 'first man' (p 49). In a ritualised episode modified from Rudyard Kipling's *The Jungle Book* (1894), Moreau's creatures recite the law of his island domain. Moreau's ambitions approach the godlike, but in a final ironic reversal he is finally killed by one of his own creations and Prendick is left indistinguishable to himself from the other 'Beast People.'[76]

While the scale of Moreau's experiments is to an extent limited to his island, the same cannot be said for Herbert Brande, the physicist in Robert Cromie's *The Crack of Doom* (1895), whose ambition is nothing less than changing the order of nature. The novel opens with his challenging assertion that 'the Universe is a mistake!' Symbolically entering the narrative aboard a ship, his scientific ambitions know no limits and take the form of a plan to restore the universe to primal ether, realizing his conviction that nature exists in permanent flux. Thus, the whole world becomes the site and subject of his experiment, which revolves around the newly discovered science of atomic fission. The narrator, possessor of only an amateur knowledge of medicine, focuses on the pathology of Brande, complicated by the latter's use of telepathic control over his questioners. In the event, Brande only succeeds in destroying a South Sea island through the first atomic explosion to be described in literature. The account closes with an unanswered question: was Brande a 'scientific magician possessed of *all* the powers he claimed, or merely a mad physicist in charge of a new and terrible explosive'?[77] The question goes unanswered, but, like this fiction generally, the possibility raised within the narrative cannot be dismissed or ignored.

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NOTES

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Editorial Headnote

Robert Duncan Milne, 'The Palaeoscopic Camera,' *The Argonaut* (San Francisco) (December 24, 1881), pp. 14–15

This story first appeared in *The Argonaut* (San Francisco) on December 24, 1881, with the sub-title 'How Dead Walls Reveal the Scenes and Secrets of the Past.' Robert Duncan Milne (1844–1899) was a Scottish-born American author and journalist, who wrote a large number of stories which appeared mostly in *The Argonaut*, edited by Ambrose Bierce, who himself published an early story of robotics – 'Moxon's Master' (1899) about a chess-playing automaton. Despite being rediscovered by Sam Moskowitz, who published a selection of stories as *Into the Sun* (1980), Milne's work remains little known. He moved within a San Francisco-based circle of writers which included William Henry Rhodes and Emma Frances Dawson, an author of supernatural tales who was mentored by Ambrose Bierce. Milne used many themes which were to be developed in the Science Fiction of the next century and which included: phonographic recordings ('The Silent Witness'), telescopy ('A Dip Into Space'), distance-controlled aircraft (A Matter of Reciprocity') and telekinesis (Professor Vehr's Electrical Experiment').

The term 'palaeoscopy' is a Greek compound meaning 'seeing the old,' implying that it is already a developed science with its own instruments. The notion of sights from the past persisting in visions of the present emerges in Camille Flammarion's *Lumen*, translated in the 1872 collection *Stories of Infinity*, where the eponymous narrator tries to construct a 'retrospective panorama' of the past (p. 48).

The book which Millbank reads from was Edwin D. Babbitt's *The Principles of Light and Color* (1878), which projects a view of the 'Universal Unity of Things' (p. 523). This work promoted the research of the German scientist Carl von Reichenbach, who posited a new force like electricity permeating Nature, which he named the Od. Following the extended quotation on Von Reichenbach's career, Babbitt's text continues:

> *Odic Light exhibits exactly the same laws and phenomena as the ordinary visible light* . . . (emphasis in original) Odic light follows the same laws of refraction as common light, as it may be condensed and brought to a focus by a lens, and also the same laws of reflection, although the same substances that reflect ordinary light, are not always of the right grade to reflect odic light, as the latter is often able to pass through opaque bodies and make them transparent.
>
> (p. 418)