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Sleeping Science-Fictionally: Nineteenth-Century Utopian Fictions and Contemporary Sleep Research

by *Martin Willis*

This is an article both about histories of sleep and how science fiction inspires new ways of studying those histories. The article has, therefore, twinned objects of study, and both take their moments of primacy. It can certainly be read as an article on the scientific, medical and literary history of sleep underwritten by new methodological innovation. However, I frame it principally as an examination of a unique mode and practice inspired by Science Fiction that takes as its case a range of scientific, medical and fictional representation of sleep. SF has long been considered a genre of imaginative writing that is centrally concerned to articulate an understanding of the present state of science's role within society and does so by anticipating plausible futures. In their introduction to this volume, Amanda Rees and Iwan Rhys Morus set out some of the ways writers of SF have attempted to do this, and the critical response their work has received. What has not been considered – either by historians of science or scholars of literature – is how the modus operandi of SF's future-orientated examination might be repurposed, more correctly reimagined, as a critical methodology. What SF does, and does freely because it is not bound to any notion of objective praxis, is to enable temporalities to collide: most often a recent present with a future. Indeed because SF draws on rules and builds narrative infrastructure from its own long genre history it actually combines three temporalities: past, present and future. What would a similar productive muddling of telos in a scholarly framework look like? One possible answer is the work I do here; placing nineteenth-century narratives of sleep (fictional, scientific, and medical) in dialogue with an ethnographic study of a contemporary sleep laboratory.

This seemingly undisciplined methodological innovation is a response, too, to recent scholarship articulating new epistemologies of scientific knowledge-making in both the history of science and science studies. Leading figures in both fields have offered distinct reconceptualizations of how we approach the study of science in the twenty-first century. For George Levine, epistemes of scientific truth need to reach beyond positivist understandings of objectivity to embrace, in the historic materials, “the human role in the constitution of truth and the defence to which the ideal of truth ought to inflect human behaviour.”¹ One way to do this, Levine contends, is not to be “coolly indifferent to the conditions either of investigator or investigated” when studying past science.² Science studies scholar Harry Collins, by contrast, finds areas of concern not in human involvement but rather in the temporal disjunctions of knowledge acquisition. Scholars in STS who involve themselves in various forms of “participant comprehension” with science, Collins claims, understand the different roles played by the actors (scientists) and analysts (scholars studying them).³ What remains problematic is the historian who works only “with archive material” because s/he cannot encompass “a real time analysis where one’s interpretations are open to critical review by those one is interpreting.”⁴ What emerges here is a clear disjunction between the different approaches to knowledge production of historians of science and science studies experts. Nevertheless, there are some who articulate a desire to circumvent the epistemic confusion of temporal shifts and subjectivity. Historian of medicine John Pickstone, for example, argues that “it is naïve to pretend that we should or can forget our present categories” and “to do justice to the past and to *use it in the present*, we need broad frames

¹ George Levine, *Dying to Know: Scientific Epistemology and Narrative in Victorian England* (Chicago: University of Chicago Press, 2002), p. 31.

² Levine, p. 42.

³ Harry Collins, *Gravity’s Ghost and Big Dog: Scientific Discovery and Social Analysis in the Twenty-First Century* (Chicago: University of Chicago Press, 2011), p. 320, 341.

⁴ Collins, p. 321n.

in which to think comparisons.”⁵ My own work in this article offers a methodology that constructs a new node at the intersection of these different understandings of how truth is revealed and disseminated. By dovetailing sleep’s historical narratives with a contemporary ethnographic story of sleep research I shall show how the production of knowledge at different temporal moments need not remain confined within its own telos but can migrate between them if properly marshalled by the self-conscious subjectivity of the investigator.

While SF’s interweaving of different temporalities was key to the development of this methodology it was additionally the interrogation of future-oriented fictions within the field of future studies that reinforced its potential. This field is ably discussed by Peter Bowler elsewhere in this volume. Future studies scholarship has been hugely enriched in recent years with the work of researchers from multiple disciplines. As a community their work has illuminated some of the conceptual territory where temporal difference can be usefully repositioned to allow for interesting new conjunctions between past, present and future. This was first articulated as early as 1989 when literary scholar W. Warren Wagar, a writer of SF himself, argued that imagining the future was a way of understanding its “*historicity*”, that is how past developments were already part of a “line of development” leading through the present to plausible future scenarios.⁶ Since Wagar’s ground-breaking study, Arjun Appadurai has extended his range of connections between past and future by noting that many imagined futures are not only anticipations but also aspirations built upon an understanding of the trajectory of past into present.⁷ More recently, Barbara Adam has extended this insight to the work of historical

⁵ John V. Pickstone, *Ways of Knowing: A New History of Science, Technology and Medicine* (Manchester: Manchester University Press, 2000), pp. 5-6.

⁶ W. Warren Wagar, *A Short History of the Future* (Chicago: University of Chicago Press, 1989), p. x.

⁷ Arjun Appadurai, *The Future as a Cultural Fact: Essays on the Global Condition* (New York: Verso, 2013), p. 286.

scholarship. She has argued that historians should be looking both to the future as well as to the past, in recognition that the historical objects they study are already examples of futures set in motion, albeit they are still in flux.⁸ The productive connections between past, present and future envisaged by future studies scholarship points once again to the importance of developing a methodology that can take some account of the complex interrelation of past and future science, and begin to interrogate how these new temporalities inflect the production and dissemination of knowledge both within the science under analysis and for the researcher hoping to understand it more clearly.

In the sections to follow, then, I take as my key objects of study a series of Victorian utopian fictions.⁹ Victorian utopias are ideal objects in this context: they are themselves examples of future-oriented SF and they explicitly connect their own present with imagined futures. They also offer the scholar additional and productive complexity in this regard. After all, what are present and future to the writer of the Victorian utopia are the past and (often) present to the scholar. In the first section I highlight the crucial role of sleep in these utopian fictions, and compare that to its representations in science and medicine in the same period. In the second section I turn to the first of my ethnographic accounts of a contemporary sleep laboratory to reveal how that work influenced my understanding of the Victorian materials. Section Three provides an extended examination of the historic materials in light of the ethnography. The fourth section returns to the ethnographic narrative while Section Five re-examines the Victorian utopias in response. I conclude by reflecting on what my methodology has

⁸ Barbara Adam, "History of the Future: Paradoxes and Challenges" *Rethinking History* 14.3 (2010), pp. 361-78, p. 374.

⁹ The fictions which begin with a form of sleeping and which I shall focus on in this article are W. H. Hudson, *A Crystal Age* (1887; New York: E. P. Dutton, 1917), Edward Bellamy, *Looking Backwards* (1888; London: Penguin, 1986), William Morris, *News From Nowhere* (1890; London: Penguin, 1987) and H. G. Wells, *When The Sleeper Wakes* (1897; London: Everyman, 1994).

achieved for my study of sleep, and what emerges as useful for future research employing the same technique to other studies.

1. VICTORIAN UTOPIAS AND SLEEP STUDIES

Victorian utopian fictions often employ a form of sleep as the equivalent of the pulp SF space rocket – to transport characters somewhere else at speed. William Morris’s 1890 novel, *News from Nowhere* is a good example. The novel opens with a group of friends “up at the [Socialist] League” enthusiastically advancing “their views on the future of the fully developed new society”.¹⁰ From this debate, the soon-to-be utopian sleeper, William Guest, returns home on the underground railway, and in that “vapour-bath of hurried and discontented humanity” he hopes to be able to “but see a day” of the potential future just discussed.¹¹ Once at his riverside home, and relaxed by the natural landscape of the Thames, he goes to bed. Guest then describes his somnolent performance:

In this mood he tumbled into bed, and fell asleep after his wont, in two minutes’ time; but (contrary to his wont) woke up again not long after in that curiously wide-awake condition which sometimes surprises even good sleepers; a condition under which we feel all our wits preternaturally sharpened, while all the miserable muddles we have ever got into, all the disgraces, and losses of our lives, will insist on thrusting themselves forward for the consideration of those sharpened wits. In this state he lay (says our friend) till he had almost begun to enjoy it: till the tale of his stupidities amused him, and the entanglements before him, which he saw so clearly, began to shape themselves into an amusing story for him. He heard one o’ clock strike, then two, and then three; after which he fell asleep

¹⁰ William Morris, *News From Nowhere* (1890; London: Penguin, 1987), 4.

¹¹ Morris, *News*, 4.

again. Our friend says that from that sleep he awoke once more, and afterwards went through such surprising adventures that he thinks that they should be told to our comrades, and indeed to the public in general, and therefore proposes to tell them now.¹²

The non-normative sleep depicted here would be commonly recognised by Victorian physiologists and contemporary sleep researchers. Contemporary researchers would likely ask whether stimulants such as coffee or alcohol had been consumed at the evening meeting and which might account for the sleep disruption, as well as note the fact that REM sleep occurs more often later in sleep (and hence after three o' clock).¹³ It is also clear, however, that Morris here represents a sleep pathology often catalogued in nineteenth-century medicine. Robert MacNish, the Glasgow physician and much-cited author of *The Philosophy of Sleep* writes, for example, that “mental emotions, of every description, are unfavourable to repose.”¹⁴ In MacNish's experience:

If a man, as soon as he lays his head upon the pillow, can banish thinking, he is morally certain to fall asleep. There are many individuals so constituted, that they can do this without effort, and the consequence is, they are excellent sleepers. It is very different with those whose minds are oppressed by care, or over-stimulated by excessive study...It is the same with the man of vivid imagination. His fancy, instead of being subdued by the spell of sleep, becomes more active than ever. Thoughts in a thousand forms – myriads of waking dreams – pass

¹² Morris, *News*, 4-5.

¹³ “Sleep Laboratory Ethnography Notebooks.” Notebook 1, 2017.

¹⁴ Robert MacNish, *The Philosophy of Sleep* (Glasgow: W. R. McPhun, 1834), 196.

through his mind, whose excessive activity spurns at repose, and mocks all his endeavours to reduce it to quiescence.¹⁵

Similar perspectives on sleeplessness were reached by numerous physicians and physiologists across the middle and late nineteenth century, so that Morris's sleeper comes to look very much like an archetypal pathological sleeper and the narrative of his unruly sleep comparable to many a medical study.¹⁶

The second half of the nineteenth century was rich with narratives and representations of sleep. Large data searches reveal a rise in the incidence of the word sleep from the beginning of the nineteenth century, reaching a peak in the 1890s before falling off again in the first half of the twentieth century. Both Google's Ngram Viewer and the UK Medical Heritage Library depict this rising and falling pattern.¹⁷ Medical publications give a more pronounced rise in the incidence of sleep: from less than 20 individual works citing sleep in 1800 to 160 by 1850 and over 280 by the end of the century.¹⁸ This then fell back to approximately 150 in the first years of the twentieth century.

The prolonged sleeping which gave a starting point to utopian fictions in the 1880s and 1890s was commonly debated by medical practitioners in the pages of leading medical journals. The *Lancet*, for example, included a letter to the editor on 3rd of July

¹⁵ MacNish, *Sleep*, 196-7.

¹⁶ See, for example, William A. Hammond, *Sleep and its Derangements* (Philadelphia: J. P. Lippincott, 1869); Marie de Manacéine, *Sleep: Its Physiology, Pathology, Hygiene, and Psychology* (London: Walter Scott, 1897); J. Mortimer-Granville, *Sleep and Sleeplessness* (London: David Bogue, 1879).

¹⁷ Google Ngram Viewer gives the incidence of sleep as 0.00395% in 1800, rising to 0.00560% in 1869, in 0.00561% 1881 and 0.00570% in 1899. This had fallen substantially to 0.00403% in 1950, and reached a low of 0.00364% in 1965. Interestingly the incidence has risen sharply since the middle of the 1990s and in the 2010s far exceeds the figures for 1899. <https://books.google.com/ngrams>

¹⁸ JISC UK Medical Heritage Library, Historical Texts, Visualising Medical History search tool. <https://ukmhl.historicaltexts.jisc.ac.uk/results?terms=sleep&date=1799-1905&undated=exclude>.

1880 under the title “Sleeping Girls” which drew readers’ attention to the “Sleeping Girl of Turville” who, the physician John Gay tells us, “has, it appears, been lying on her side with her hand under her face, and without apparent adequate means of sustenance, since March, 1871.”¹⁹ Her image resurfaces again in 1890, remediated through the work of Edward Burne-Jones in his Sleeping-Beauty-inspired Briar Rose series.²⁰

These narrative interweavings suggest the wide-ranging perspectives and varied commentaries on sleep available to later nineteenth-century audiences and the close ties between scientific analyses of disordered sleeping and their re-imaginings. 1890s sleep research bears this out. For example, one of the most celebrated of theatrical presentations of prolonged somnolence was produced at the Royal Aquarium in Westminster at the start of 1895. For over a week visitors could see “the sleeper” Henry Nolan, as the *Times* reported it, “in an easy recumbent position in a glass case without a lid”. Nolan’s well-being was attended to by the physician Forbes Winslow who had earlier “pronounced Nolan to be absolutely unconscious”.²¹ The *Morning Post*, which described the glass case as “coffin-shaped” noted that Winslow “examined the man’s pulse...and declared it to be weak but regular, 78 beats being recorded.”²² This glass-encased sleeper, monitored by medicine, is surely the precursor to, and potential inspiration for, H. G. Wells’s own utopian sleeper. Wells was certainly living in London in February 1895 and would have had the opportunity to see advertisements or press reports of the sleeper, although whether he visited the Royal Aquarium is impossible now to know. The third chapter of *When the Sleeper Wakes* certainly provides a striking parallel to the experiment conducted there. As Graham, the sleeper of the title, awakens

¹⁹ John Gay, “Sleeping Girls,” *Lancet* (3 July 1880), 31. Narcolepsy – one of a number of sleep-related conditions – was first defined around this time.

²⁰ See, for example, “The Rose Bower” (1870-1890).

²¹ “An Experiment in Hypnotism,” *Times* (2 February 1895), 10.

²² “Royal Aquarium, Westminster,” *Morning Post* (2 February 1895), 6. For the medical establishment’s perspective on this entertainment and Winslow’s involvement in it see “Death and His Brother Sleep,” *Lancet* (9 February 1895), 361.

he describes how he came slowly to realise “he was not in a bed at all as he understood the word, but lying naked on a soft and yielding mattress, in a trough of dark glass...In the corner of the [glass] case was a stand of glittering and delicately made apparatus, for the most part quite strange appliances, though a maximum and minimum thermometer was recognisable.”²³ Here is the same glass case and the same physiological assessment as was displayed at the Royal Aquarium. It is a reminder of the close parallels that existed in the period between medical narratives of sleep pathologies, cultural representations of sleeping and fictional interrogations of sleep’s extreme states. The particular link between sleep and utopianism is further enfranchised by contemporary sleep research; an argument I shall now develop.

2. INTERLUDE: THE UTOPIA OF THE CONTEMPORARY SLEEP LAB

The contemporary sleep researchers in whose laboratory I undertake my participant ethnography have much in common with their Victorian predecessors. They employ instruments and techniques from neuroscience to study the physiology of their subjects, but ask questions that are primarily psychological. Similarly, late Victorian experts on sleep such as William A. Hammond and Henry Charlton Bastion combined their work as physician or physiologist with the then emerging field of neurology to ask questions about sleep’s relation to ailments of body and mind.

Just as striking, however, is the science fictional nature of the laboratory. The Cardiff sleep lab has a patina of SF to it even before entering.²⁴ It is housed within the

²³ Wells, *Sleeper*, 20.

²⁴ I conducted a participant observation of selected experimental nights at the Sleep Laboratory at Cardiff University from May 2017. I was invited by two researchers – Joe and Alison (not their real names) – to attend part or all of their memory experiments which included one or two participants at a time. I spent either a few hours or an entire night with the researchers in the laboratory. My participation was limited to a support role in attaching electrodes to participants (which I was trained to do by the researchers) and a viewing role of the monitoring processes and diagnostic tests. I recorded my own

Cardiff University Brain Research Imaging Centre, whose entrance signage is rendered acronymically: CUBRIC.²⁵ Although its spelling diverges a little from Stanley Kubrick, its sonorous resemblance is clearly not by chance. CUBRIC is designed to appear, and to be, at the cutting edge of scientific research. The sleep laboratory I have been invited to attend has its own acronym to bear. It is one part of a network of sleep research facilities led by the Neuroscience and Psychology of Sleep project, or NAPS for short.²⁶ Although I have been invited to view a particular experiment on the role of sleep in memory, which requires playing sounds to sleeping participants throughout the night and at specific moments in the sleep cycle, it is the culture of the sleep laboratory itself that interests me. It is quickly apparent that the majority of one night's experimenting for the sleep researcher is spent at the computer screen watching multiple EEG signals trace leftwards across the screen. These refer directly to the numerous electrodes attached to the head and face of the participants. The memory experiment requires twenty electrode attachments. Each of these is placed individually at the correct position on the head and its long wire traced back to a specific plug point on a paperback book sized router that flashes green and red. As more electrodes are attached participants come increasingly to look like a medusa. Sleeping must inevitably be difficult when encumbered with such awkward attachments. Indeed it becomes clear, as I am shown a template EEG, that the ideal participant is someone who falls asleep quickly, who is able to ignore the wiring and the unusual nature of the laboratory rituals and get to sleep, thus enabling experiments to begin at the earliest possible moment.

notes in field notebooks and conducted interviews with the sleep researchers outside of the experimental periods. All of the subsequent material in this section is drawn from the field notebooks I kept during Summer 2017. These I have titled "Sleep Laboratory Ethnography Notebooks." The majority of the data here described can be found in Notebook 1.

²⁵ The CUBRIC website can be viewed at <http://sites.cardiff.ac.uk/cubric/> .

²⁶ Further information on the Cardiff arm of NAPS can be found at <http://sites.cardiff.ac.uk/cubric/research-2-2/neuroscience-and-psychology-lab-naps/>.

Sleep researchers, it becomes clear, are overwhelmingly frustrated by the participant who thinks they are unlikely to be able to sleep, or sleep well. This is something several of the participants say when they first enter the laboratory. It strikes me as natural nervousness – both to feel this way and to say so – but the sleep researcher is inordinately consumed by the potential for wakefulness. This strikes me as strange until I realise that the sleeping or non-sleeping participant finds a parallel in the sleeping or non-sleeping researcher. The researcher who has to watch the EEG continually cannot indulge themselves with a short sleep if their participant remains awake. They must wait for the correct sleep cycle in order to execute the correct computer commands at the required moment. This cannot be automated. No sleeping participant, no sleep cycle, no sleeping researcher. Sleep deprivation is extraordinarily high among sleep researchers. Their conversations with me, and with each other, reveal an obsession with sleep patterns and quantities that have nothing to do with their experiments and everything to do with their own pathological sleeping. As one researcher reports to me, of another, “Joe’s sleep pattern is a disaster. He can never get to sleep until 3 or 4am now. Their sleep is...[dismissive hand gesture]”. Joe shows me his own EEG. This is designed to teach me something of sleep scoring. For hours, though, I am watching the EEG of someone who is awake. When we reach a point on the EEG trace where sleep’s recognisable elements begin to appear – when Joe can spot a K-complex and I attempt to find a spindle – Joe says “at last, I’m asleep here”.

Sleep is the obsession of sleep researchers; but not as I would have imagined. Their own aberrant wakefulness and their desire for participants to sleep well constructs sleep as utopian. Sleep is something they daydream of reaching. It is envied in others, and longed for in themselves. Sleep is also located: it has a significant spatiality related to their experimental practice. Sleep happens in the bedrooms of the laboratory and on its computer screens. It is not experiential for the researcher, but rather geographic and

temporal. One must go to the computer room to find sleep, and one must arrive there at specific times to witness it. Sleeping is happening somewhere else, somewhere unseen and usually unreachable.²⁷ Sleep is situated as both a utopian experience and a site of utopia. It can be characterised, as utopias often are, as a better state. It is also desired: like many utopias it is imagined as ideal before it is reached. Sleeping, for the sleep researcher, is both to work fruitfully, but also to emerge from that work refreshed and energised. Fruitful labour that enhances ease is the keynote of nineteenth-century utopian fictions. It is my time in the sleep laboratory that has shown me that sleep is not just the subject of utopian fictions but an aspect of it, even if that ends up in more complex articulations that reach beyond the adjective of good (and its opposite, bad, as I shall discuss later). For my purposes, the reduction to the adjectival sense of good is useful as a way of re-interrogating the historical materials. It is to these materials that I now return.

3. THE GOOD PLACES OF SLEEP

Hudson's *The Crystal Age*, Bellamy's *Looking Backwards* and Wells' *When the Sleeper Wakes* all begin with forms of pathological sleeping that seem to position sleep at some distance from utopia. Smith, who has a fall that renders him unconscious before awaking in the crystal age, suffers from what physicians studying sleep in the period would have called coma somnolentum.²⁸ Bellamy's sleeper, Julian West, is an insomniac who uses largely discredited mesmeric treatments to try to sleep, and Graham, Wells's protagonist, is similarly sleepless and subject to trances. Such discouraging starting points give way to a series of representations of sleep that link it much more closely with the imagined

²⁷ Sleep researchers are extremely reticent to enter the bedroom of a participant at any point during a night's experimenting, both for experimental and ethical reasons.

²⁸ See W. Travers Cox, "Morbidly Protracted Sleep," *Lancet* (18 June 1835), 410-11 and William T. Gairdner, "Remarks on a Case of Abnormal Disposition to Sleep, Alternated with Choreic Movements," *British Medical Journal* (30 October 1875), 547-50.

utopian society which each sleeper experiences. Their sleep in particular does not end with entry into a utopian future but becomes a de facto signifier of the state of that utopia. There are therefore periods where sleep not only represents the good place but is actualised as the good place – it becomes understood spatially as the utopian space that the sleepers desire. Graham feels this intuitively as he struggles to come to terms with the future into which he has awoken: “He wrestled with the facts in vain. It became an inextricable tangle...An old persuasion came out of the dark recesses of his memory. ‘I must sleep,’ he said. It appeared as a delightful relief from this mental distress and from the growing pain and heaviness of his limbs.”²⁹ For Graham sleep is both a state, of ease and pleasure, and a material location, where his embodied experience can be transformed. Similarly, Julian West also struggles to understand the futuristic Boston he has woken into and is advised to sleep in order to cope with the mental unrest it has caused: “I should strongly advise you to sleep if you can tonight, Mr. West,” Doctor Leete his host tells him, “in the trying experience you are just now passing through, sleep is a nerve tonic for which there is no substitute.”³⁰ Hudson uses sleep in a more abstract way than either Bellamy or Wells, but likewise locates it as part of a utopian geography: utopia is, as Smith narrates, a “slumberous valley” where he had been brought by the “swift black current” of extended sleeping.³¹ In fact, for Hudson, sleep acts as the natural entrance to utopic space. To reach the apogee of utopian experience in the crystal age, when “nature reveals herself to us in all her beauty” certain diurnal rhythms must be followed: “At night we sleep; in the morning we bathe; we eat when we are hungry, converse when we feel inclined, and on most days labour a certain number of hours”. The first step towards utopia is sleep, and the activity of sleeping is recognised as the

²⁹ Wells, *Sleeper*, 70.

³⁰ Bellamy, *Backwards*, 114.

³¹ Hudson, *Crystal*, 249.

gateway of that journey. Sleeping, in these fictions, has a spatial economy directly related to the utopia on offer. Put simply, the place of sleep is itself utopian.

Nineteenth-century medical writing on sleep also characterises it as a specific location within the extended experience of the body that acts to address bodily fragility or breakdown. From the 1830s sleep was eulogised as a place of relief from the hazards of life. It is William A. Hammond, one of the most often-cited physicians writing on sleep across the English-speaking medical world in the later nineteenth century, who provides perhaps the most memorable example of sleep as a utopian space. In his book *On Wakefulness*, he cites a case first detailed by the psychologist Forbes Winslow which tells of a prisoner “sentenced to die by being deprived of sleep”.³² By the end of a week “he implored the authorities to grant him the blessed opportunity of being strangled, guillotined, burned to death, drowned, garrotted, shot, quartered, blown up with gunpowder, or put to death in any conceivable way their humanity or ferocity could invent.” For Hammond, this highlights “the horrors of...want of sleep”.³³ Like the traitor tortured by French soldiers, which is Hammond’s next example, it is the “deprivation of sleep” that is “the greatest of all his torments”. Sleep here acts as a utopian place to which the unfortunate prisoners are denied access. It is a place where, it is imagined at least, the pains of the body will be nullified and mental repose enjoyed.

With these examples Hammond builds towards the keynote of his argument: that it is the modern world (of the 1860s) that is causing poor sleep habits and thus keeping everyone from the utopian world of good sleep.³⁴ Increasing “civilisation” and “refinement” combined with poor “hygienic management” of the self had placed sleep in

³² William A. Hammond, *On Wakefulness* (Philadelphia: J. P. Lippincott, 1866), p. 14.

³³ Hammond, *Wakefulness*, 14.

³⁴ Hammond, *Wakefulness*, 39-40. Hammond’s perspective is not singular. Across the later nineteenth century, and in Britain as well as America, this reading of modernity was common. For an alternative version, in a very different print publication, see also “Sleep and Sleeplessness,” *Belfast Newsletter* (9 April 1887), np.

jeopardy.³⁵ One of the common ways to try to treat the nervous conditions that were seen as a product of this modernity was to institute sleep therapies that mitigated nervous symptoms. H. Charlton Bastian, physician at University College Hospital in London and consultant to the national hospital for the paralysed and epileptic, showed how chorea – a condition whose symptoms are uncontrollable jerking movements of the body – could be almost entirely cured by sleep.³⁶ Placing his patients into extended sleep states of several weeks duration, Bastian finds their choreal movements much reduced when they awaken, and sometimes “gone, except very slight tremors now and then”.³⁷ As Bastian, and earlier William Gairdner wrote, the periods of extending sleep seem rather like placing the patient somewhere else as much as in a different form of consciousness. Bastian uses phrases such as “passing out of this state” and into another, suggestive of locomotion as well as mental transformation, while Gairdner also sees the entry into sleep, or the exit from it, as a journey from one state to another.³⁸ “Many times in the course of an hour,” he writes of a choreal patient who suffers from a sleep pathology we would now view as narcolepsy, “the patient may pass from the most perfect wakefulness into the most profound sleep”.³⁹ So certain is Gairdner that this sleeping takes the patient to some other place that he is astonished when she awakens that she can return to a conversation she held previously: “If she be allowed to fall asleep, and then again suddenly reawakened...[she] resumes conversation, or her ordinary occupations, exactly at the point at which she left off.”⁴⁰ These back and forward movements between the noumenal world of the nineteenth century and the phenomenal world of sleep, and how

³⁵ Hammond, *Wakefulness*, 39-40.

³⁶ H. Charlton Bastian, “Clinical Lecture on a Case of Protracted and Severe Chorea Treated By Prolonged Sleep,” *Lancet* (13 July 1889), 55-7.

³⁷ Bastian, “Prolonged Sleep,” 56.

³⁸ Bastian, “Prolonged Sleep,” 57.

³⁹ Gairdner, “Abnormal Disposition to Sleep,” 548.

⁴⁰ Gairdner, “Abnormal Disposition to Sleep,” 548.

they are characterised, match, to an extraordinary degree, the shifts that occur between the utopian novel's present and its utopic future.⁴¹

First, utopian fictions also regard the modern world as the distressing dystopian present against which their utopia will be set. Their views on modernity parallel those of the medical profession. Bellamy sees 1880s Boston defined by “squalor and malodourousness” and beset by “stunning clamour” that turns Julian West into a “Madman”.⁴² Similarly, Wells's sleeper, Graham, feels as though he has “no part” in the Victorian world, that its “thousand distractions” have led to the destruction of his “nervous system”.⁴³ Further, in the continual evocation of memories of the nineteenth century there is the same oscillation between waking distress and repose as found in the medical case notes of sleep therapy. *Looking Backwards* is the most explicit example of this: West recalls the nineteenth century throughout the novel and in one striking scene he seems to awake not into “the glorious new Boston” of the future but his own “familiar” nineteenth century city.⁴⁴ Luckily, for West, this proves to be a dream, an interesting differentiation, for the critic at least, between the unhelpful dream state and the more therapeutic sleep state which readers have already witnessed leaving West both “greatly refreshed” and “in a dozing state, enjoying the sensation of bodily comfort”.⁴⁵ *A Crystal Age*, of all the utopias of the period, shows the therapeutic effects of good sleep, and contrasts that with the counter-narrative of the Victorian present which acts upon Smith “like the memory of a repulsive dream”.⁴⁶ Sleeping, unlike dreaming, offers

⁴¹ Nancy also argues that sleep is a location as much as an experience. In sleep, he states, “the body, for its part, abandons itself paradoxically to the very location of the mind: it is no longer actually exposed in space but implicitly or virtually withdrawn into a nonplace where it anaesthetizes itself and separates itself from the world.” (Nancy, *Fall*, 35) The location of mind is where Kant would place the phenomenal.

⁴² Bellamy, *Backwards*, 218-9, 229.

⁴³ Wells, *Sleeper*, 5-6.

⁴⁴ Bellamy, *Backwards*, 215-6.

⁴⁵ Bellamy, *Backwards*, 77.

⁴⁶ Hudson, *Crystal*, 149.

utopian ease. Smith finds this early in the novel when “merciful sleep laid her quieting hands on the strings of my brain, and hushed their weary jangling.”⁴⁷ It is, however, not in offering repose that sleep has its ultimate power, but in its ability to salve the health of the Mother of the house in which Smith resides. When Smith discovers that her “malady had suddenly become aggravated” so that she “could not sleep for torturing pains in her head” he is invited to lay his hands on her forehead.⁴⁸ Although Smith thinks his actions provide a “not very promising remedy” they actually induce sleep: “sleep,” as Smith’s companion explains, “that would save her”.⁴⁹ Utopian fictions provide an interesting parallel to medical sleep studies, replicating their recognition of the powerful therapeutic effects of sleep while recognising that beyond its experiential qualities sleep also has spatial boundaries. Yet utopian fictions of the nineteenth century rarely remain secure within the boundaries of their own good places. Many provide potential reversals of that space, turning utopia into dystopia. The contemporary sleep lab also suggested the possibility of that oscillation between good and bad sleep, especially in its allocation of spaces which were reminiscent of Foucauldian enclosures of dystopic surveillance.

4. INTERLUDE: BAD SPACES IN THE CONTEMPORARY SLEEP LAB

The Cardiff sleep lab is a place of inhibiting spaces.⁵⁰ Fitted out like a hospital ward, with muted paints and antiseptic linoleum, it is configured around a short L-shaped corridor from which a number of bedrooms radiate. These rooms vary in size, from moderate (for participants) to cell-like (for the researchers). There is also a computer room, where all the monitoring takes place. This, too, is tiny: around 4 feet by 8 feet, it has two old chairs and two even older computers. On the walls are pinned curling pieces of paper

⁴⁷ Hudson, *Crystal*, 108.

⁴⁸ Hudson, *Crystal*, 262-3.

⁴⁹ Hudson, *Crystal*, 266.

⁵⁰ The commentary in this section is again drawn from my “Sleep Laboratory Ethnography Notebooks.” The impressions described can be found in Notebook 1.

with lists of emergency numbers and lab instructions. A cartoon featuring Batman tells you to turn out the lights when you leave, or else. At night, when the lab conducts its experiments, its spaces are quiet and cold. The temperature is kept relatively low in order to enable good sleeping and the lab is sound-proofed for the same reason. This may be rational in the abstract but it contributes to an atmosphere of unnatural, even spooky, isolation.

The lab's architecture of security enhances its sensory alienation. Every door is opened either by a numerical code entered on a keypad or with a swipe of an electronic card. Communication between the participants and the researchers is conducted through the use of alarms; one alarm tells the researcher that a participant has finished a test, another that they require some help with the equipment in their room. Everyone, myself included, is accompanied everywhere. Nobody moves around by themselves and no-one goes anywhere without invitation. You do not feel that the spaces of the lab beyond your own room are for you to inhabit. Like the vampire, you wait to be invited to transgress the boundary of thresholds. Practically speaking, of course, this is so that doors can be opened for those of us without cards and codes. It feels rather different. The experience is of a severe restriction on movement. Participants fitted with electrodes look particularly encumbered as they are chaperoned from one room to another. To me, they look like shackled prisoners whose jailors are escorting them back to their cells.

Electrode fitting, as I hinted at earlier, produces a strange cyborg hybrid of human participant and technology. The process of fitting the electrodes is, however, awkwardly intimate. Alison, one of the researchers, first uses this word – intimate. It is not just the uninitiated like me who feel this way. As I am trained to attach the electrodes for myself I come to understand this intimacy first-hand. To attach a single electrode you must first mark the skull of the participant with a red crayon, finding a way through hair to bare scalp then marking firmly. Then, to clean the scalp of oils that might lead to the

electrode falling off you deploy a cotton bud dipped in a cleanser. To clean effectively you need to rub hard. Next, the small circle of metal at the end of an electrode is covered liberally with a grey-ish sticky gel and stuck firmly against the head. Holding this in place, you tape over the top of it with a strip of plaster, again moving the hair to find scalp to stick to. Then you do all of this a further nineteen times, over the head, around the eyes, behind the ears and on the chin. During this long process, around an hour, it is impossible to forget you are doing all of this to a complete stranger. To do it well – and nobody wants an electrode to fall off halfway through the night and ruin an experiment that has taken weeks to set up – you must get your hands onto this stranger, into their hair, around their neck and down behind their ears. It is an acutely self-conscious tactile experience, a form of bodily monitoring and control that foreshadows the study of the brain's electricity that is to follow. I ask the participant on whom I am working if she is comfortable. 'Yes,' she says, unconvincingly.

5. SLEEP'S DYSTOPIAS

How do Victorian utopian fictions stage this move from good to bad sleep, in the same adjectival sense of these terms? The most dystopian elements of Bellamy's *Looking Backwards* emerge from pathologies of sleep: insomnia, disrupted or restless sleep and premature awakening. Julian West's horror at his arrival in the far future, for example, is accompanied by a rather abrupt awakening from his "somewhat too long and profound sleep" which leaves him "feeling partially dazed".⁵¹ His fears that the Boston of the year 2000 may prove to be a dystopian rather than utopian future continue to haunt him as he contemplates the ending of his first day there. Importantly, this concern is cast in the language of sleeplessness:

⁵¹ Bellamy, *Backwards*, 51.

Now I had been looking forward all the evening with some dread to the time when I should be alone, on retiring for the night...I had had glimpses, vivid as lightning flashes, of the horror of strangeness that was waiting to be faced when I could no longer command diversion. I knew I could not sleep that night, and as for lying awake and thinking, it argues no cowardice, I am sure, to confess that I was afraid of it.⁵²

West connects his inability to sleep well to a fear of contemplating his horrific position as a man displaced into a world he does not understand and in which he is entirely isolated. Later, he awakens too quickly to recall that he is living in the far future and this abrupt exit from sleep causes “mental confusion [that] was so intense as to produce actual nausea.”⁵³ West’s “mental torture” is matched only at one other moment in the novel; when he dreams of having awoken again in late nineteenth-century Boston and believes that the future utopia was itself the dream vision rather than the reality.⁵⁴ This vision is excited into existence by pathological sleeping that presents as sleeplessness.

Examples of the dystopian nature of wakefulness during hours when sleep is sought are manifold in the scientific and medical literature of the period. For many writers on sleep pathologies to be awake at incorrect times is to enter into potential dystopian space or to create dystopian sites within the body. Louis King, a late Victorian writer on health and a keen reader of the work of sleep researchers, argues that hard work “cannot fail to induce healthy and sound sleep” while idleness often leads to sleeplessness and, in turn, “stores up in the system products of disease which must

⁵² Bellamy, *Backwards*, 60.

⁵³ Bellamy, *Backwards*, 80.

⁵⁴ Bellamy, *Backwards*, 78.

ultimately lead to...destruction.”⁵⁵ For King, extended sleep pathologies would eventually upset the entire balance of the body, “and no effort on our part will then save us from ending our days as useless cripples or hopeless imbeciles.”⁵⁶ In America, too, sleep researchers envisaged dystopian results for poor sleepers. Hammond, in his 1869 book *Sleep and Its Derangements* provided an extended case study of a young sleepless woman whose mental disturbance is an uncanny parallel for Bellamy’s Julian West. Cited in the chapter titled “Pathology of Wakefulness,” Hammond’s patient has her mind “filled with the most grotesque images which it was possible for the imagination to conceive, and with trains of ideas of the most exaggerated and improbable character.”⁵⁷ Like West, the young woman suffers most from “the horror with which I look forward to the long rows of too familiar phantoms and thoughts which I know will visit me before morning.”⁵⁸

While Hammond viewed the pathological sleeping of this patient with sympathy, many poor sleepers were blamed for their own inability to sleep properly. Indeed Hammond himself fell into this in his own work, giving the example of “an intimate friend” whose sleeplessness (caused by over-work) led to “inflammation of the brain” and ultimately “acute insanity.”⁵⁹ This, Hammond warns his readers, was because “he deprived himself of the amount of sleep” he required.⁶⁰ Late nineteenth century utopian fictions investigate this culture of assumed responsibility for one’s own sleeping. Hudson’s protagonist, Smith, finds himself sleeping poorly and suffers the consequence of his own inability to access suitable rest. Smith’s first night in the crystal age is one of nervous wakefulness. Troubled by having to find his way around what he describes as

⁵⁵ Louis King, *Work of Body, Work of Brain, Recreation, Sleep* (London: Hamilton, Adams and Co, 1885), 59.

⁵⁶ King, *Work*, 62.

⁵⁷ Hammond, *Sleep*, 236-7.

⁵⁸ Hammond, *Sleep*, 237.

⁵⁹ Hammond, *Sleep*, 228.

⁶⁰ Hammond, *Sleep*, 228.

“sleeping-cells” in the dark, Smith finds that he does not have the bodily repose for proper rest: “I laid me down, but not to sleep. The misery of it! For although my body was warm – too warm, in fact – the wind blew on my face and bare legs and feet, and made it impossible to sleep.”⁶¹ This sleeplessness is a warning sign of Smith’s later mental distress, which brings about a similar, but more profound, wakefulness. After falling unconscious from over-work, Smith is brought to an interview with the Father of the house where he is interrogated about his sleeping: “you went to your task in the woods almost fasting, and probably after spending a restless night. Tell me if this is not so?” Smith’s response is to admit that he “did not sleep that night”. As a result, the Father orders Smith punished:

‘Unrefreshed by sleep and with lessened strength,’ he continued, you went to the woods, and in order to allay that excitement in your mind, you laboured with such energy that by noon you had accomplished a task which, in another calmer condition of mind and body, would have occupied you more than one day. In thus acting you had already been guilty of a serious offense against yourself.⁶²

For this sleeplessness Smith is sentenced to imprisonment “for the space of thirteen days”.⁶³ This reading of wakefulness as a breach of self-discipline – as a form of self-styled dystopia that should be countered by personal attention to dutiful sleeping – is a common view in nineteenth century sleep research. The American hygienist Lydia Fowler concluded that leading a life of sobriety, propriety and Godliness was essential so that “when sleeping we may enjoy that sleep which is peaceful, and gives us rest to

⁶¹ Hudson, *Crystal*, 100-1.

⁶² Hudson, *Crystal*, 238.

⁶³ Hudson, *Crystal*, 239.

prepare us for our daily duties.”⁶⁴ Similarly the English physician Joseph Mortimer-Granville noted in his 1879 book on sleep that the body requires “wise management” in order to sleep properly.⁶⁵

One other failure of self-management which dominates sleep studies of the period, and which is specifically interrogated in Wells’ *When the Sleeper Wakes*, is deceit. Numerous studies of extended sleeping focus attention on the potential for the phenomena of extended sleep to be fraudulent. In the case of the Sleeping Girl of Turville, John Gay noted that the medical men who had visited the girl, “without any exception” viewed her extended sleep “with more or less scepticism”.⁶⁶ While Gay himself noted that he had no reason to find her a fraud, his treatment suggests that he was, at least, determined to discover whether he had been hoodwinked:

I had a grain of tartar emetic [a toxic drug used to induce vomiting] placed on the back of the tongue. The girl began to show signs of awakening to the dismal consequences of the salt’s activity...When these effects subsided, she relapsed into her former condition, when, after an interval of twenty-four hours, another dose was administered, and was followed by like effects....A third dose was ordered, in her hearing, when she roused herself, and once and for all refused to submit. The remedy had done its work.⁶⁷

Such was the concern over fake sleepers that doctors like Gay resorted to extreme treatments, either to rule out fraudulence or malingering or to confirm it. There were a number of medical cases that showed the merits of this approach: William Gairdner’s

⁶⁴ Lydia Fowler, “How, When and Where to Sleep: A Lecture,” in *Lectures by Mrs. Fowler* (London: W. Tweedie, 186?), 32.

⁶⁵ J. Mortimer-Granville, *Sleep and Sleeplessness* (London: David Bogue, 1879), 75.

⁶⁶ Gay, “Sleeping Girls,” 31.

⁶⁷ Gay, “Sleeping Girls,” 31.

well-known case of choreic movement treated with sleep was revealed a few years later to be a case of fakery.⁶⁸ Fears over deceitfulness placed the pathological sleeper in a distinctly dystopian medical milieu. Awakened often into violent sickness, as the Sleeping Girl of Turville experienced, or into a prison-house of other medical interventions designed to manipulate and deceive the patient, extended sleepers often found themselves imprisoned not only by their pathological sleeping but also by doctors claiming to attend to their needs.

Wells' sleeper, Graham, experiences a similarly manipulative and controlling environment from those who wake him. Suffering from "the spiritless anaemia of his first awakening" Graham is unable at first to understand the control exerted upon him.⁶⁹ Wells, however, makes that control clear to the reader not only through the novel's plotting but also in the constant relation of wakefulness to dystopia: in, for instance, connecting the untrustworthy Ostrog to the sleeper's new wakefulness. Most interesting, however, is that Wells also constructs a period in the novel where the sleeper is perceived as a fraud. In an encounter with an old man Graham discovers that he believes the real sleeper "died years ago" and was replaced with a "poor, drugged insensible creature".⁷⁰ As they speak the old man provides, in effect, a case history of the sleeper that leads Graham to reveal himself as the subject of their conversation: "I *am* the sleeper. He had to repeat it. There was a brief pause. "There's a silly thing to say, sir, if you'll excuse me."⁷¹ Time and again Graham asserts that he is the sleeper, each time to be rejected by the old man: "Call yourself the Sleeper if it pleases you. 'Tis a foolish trick--".⁷² Graham, unlike the other fictional sleepers, is (at least momentarily) considered to be a fake. The

⁶⁸ William T. Gairdner, "Sequel of a Case of Abnormal Disposition to Sleep, Alternated with Choreic Movements," *British Medical Journal* (4 May 1878), 635-7.

⁶⁹ Wells, *Sleeper*, 217.

⁷⁰ Wells, *Sleeper*, 87.

⁷¹ Wells, *Sleeper*, 94.

⁷² Wells, *Sleeper*, 95.

medical and scientific analysis of sleep and its fraudulent abusers reveals why. It is that Wells' novel is also the only one that properly approaches and addresses its own vision of dystopia. Unlike *A Crystal Age*, *Looking Backwards*, or *News From Nowhere*, Wells' other place is utopian only temporarily. Far more keenly it anticipates a dystopian future. That one method of representing this was to call into question the authenticity of sleep illuminates its importance to Wells, and indeed to all of these narratives.

6. CONCLUSIONS

Sleep itself begins in a fiction. In a discussion in the Cardiff sleep lab with sleep researcher, Alison, she noted that sleep always begins with pretending to sleep: with lying down, closing one's eyes and relaxing the body.⁷³ Sleep is therefore imagined before it becomes real – it is phenomenal before it is noumenal. This recognition of sleep as both real and imagined is one of the things that has become apparent through the specific methodology of placing past, present and future in the new alignments above. What has been the benefit of this methodology? Examining the contemporary has proved a creative way to access the past; not the past of records and narratives, but an experiential past that can in part be accessed by getting as close as possible to some of the same concerns and activities, even some of the same bodily actions, as the history and literature that I have investigated. Asking questions of historical materials that were formed in the contemporary world of sleep research opened up an entirely new way of considering nineteenth-century sleep. Making use of contemporary science, then, offers an intriguing and different way to enter into a kind of ecotone (to use an environmental term meaning mixed habitat) between science, literature and history. It also enabled a further historicizing of present sleep research, and potentially gives an opportunity for the investigator to propose new ways of knowing that will prove productive in thinking

⁷³ "Sleep Notebooks," Notebook 1.

about sleep's futures. That is, this temporally disjunctive method can tell us what it is in our own present and future that we should have in better focus. To that extent it is an interventionist telos which gives the opportunity for action. It additionally gives some active part in the contemporary world back to the historian of science, too, for it is principally the scholar who is able to see the different telos at work together.

One proof of its success here is in what new knowledge might be conceived of late nineteenth century and contemporary sleep. Possibly the most influential work on sleep in the nineteenth century is Roger Ekirch's brilliant essay on segmented sleeping. Ekirch convincingly showed, in his 2001 article, that in the Western world up until industrialisation sleep was taken in two parts rather than in the single (consolidated) fashion that now seems the norm. Ekirch concluded that the loss of segmented sleeping meant a comparable loss for our unconscious, which no longer has "an expanded avenue to the waking world".⁷⁴ Unable to awake and reflect upon our own dreaming after a first short sleep, or even to remember those dreams we have had, Ekirch explains, we have "continued to lose touch with our dreams" and in turn have also lost "a better understanding of our deepest drives and emotions".⁷⁵ This might well seem true when looking back at the rise of industrialisation and the concomitant loss of segmented sleep. But by the later nineteenth century the scientific, medical and literary narratives I have examined here suggest that the Western individual wanted something else from sleep and recognised that good sleeping could provide it: to be, for a time, apart from our selves.

Wells saw this disassembly of the self during sleep as its most wonderful characteristic, as he articulated just before the sleeper awakes: "What a wonderfully complex thing! This simple seeming unity – the self! Who can trace its reintegration as morning after morning we awaken, the flux and confluence of its countless factors

⁷⁴ Ekirch, "Sleep," 344.

⁷⁵ Ekirch, "Sleep," 385.

interweaving, rebuilding, the dim first stirrings of the soul, the growth and synthesis of the unconscious to the subconscious, the subconscious to the dawning consciousness, until at last we recognise ourselves again.”⁷⁶ This is a direct statement of sleep as utopia *because* it offers a period of time where one is absent from the self. Wells’ metaphor additionally hints at how sleep might offer the self a mode of refurbishment that enables smooth running.

Late nineteenth century sleeping is not about dreaming or recollecting. It is about being able to break off from the self to reinvigorate it. Sleeping is essential to our social wakefulness. What utopian fictions and sleep research show is that to achieve this we need to have periods where we forget ourselves. Having a sense of relief from the place of ourselves is a way of gaining the repose we actually need. Utopia, then, is time away from ourselves, time that then allows us to be ourselves and to inhabit our own selfhood without fatigue or fervour. This is what utopian fictions imagine, and what contemporary sleepers aspire to. It is late Victorian sleep. It is also our own.

⁷⁶ Wells, *Sleeper*, 19.