

Atkinson Grimshaw, *Reflections on the Thames* (1880)

Explorations in the Cultural History of Light and Illumination

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Abstract The periods in which each new or refined form of artificial lighting have become dominant have presented their illumination as characteristic of the highest state of progress, as a significant stage of development that has lifted humanity out of a state of nature. Meanwhile, the everyday use of lighting has been complex, driven by practicality, expediency and materiality, not linear 'progress'. This paper explores these uses, the reception and meanings attaching to artificial illumination during the nineteenth century, through the lens of Atkinson Grimshaw's *Reflections on the Thames* (1880). In this painting, situated within a long history of nocturnes and landscapes, we also see an heterogeneous interplay of reflected artificial (gas, oil, electric arc) light, each consumed simultaneously within metropolitan culture, itself seen as the apogee of civilisation for the time, all cut through by the tidal river Thames and (natural) moon light. In this painting, we see how a Victorian genre artist, reflecting on the Thames, created a narrative of London as an unsleeping, working Capital, framed by nature, dependent on its forces, illuminated, yet shady, multifaceted, effortful.

Summary 1 Introduction. 2 Histories of Light and Civilisation. – 3 Reflections on the Thames: Moon-, Oil-, Gas- and Electric-Light. – 4 Concluding Remarks: Languages of Water and of Light.

Keywords Grimshaw. Light. Illumination. Thames. Empire.

The degree of culture attained by a people is indicated by, among other things, their need for illumination.

(Richard 1908, 106)

1 Introduction

In 1878 in the *Times*, Charles Haddon Spurgeon (1834-92), respected as a speaker in Britain far beyond the Baptist denomination he represented, was reported to have once said that "a man who couldn't preach for 12 months about a tallow candle was not worth his salt" (*The Times*, 14 September 1878, 5). The presumed value of artificial light, its production and its effects, as aid to communication, was a commonplace among nineteenth-century lecturers, authors, critics, artists as well as preachers.

George Eliot (1819-1888) used a description in *Middlemarch* (1872) of the unifying effect of candlelight generating concentric circles on a scratched surface as a scientific “parable” of the way unrelated “events” could be made to appear coherent (Eliot 1872, 70). In *Tess of the D'Urbervilles* (1891) Thomas Hardy (1840-1928) used images of piercing linear light from oil and paraffin lamps to move Tess Durbeyfield's story forward and draw the reader's focus to the narrative's intense tragedy (Hardy 1891, 211-2). In 1890, General Booth (1829-1912), Methodist and founder of the Salvation Army, used the image of a lighthouse in his social polemic *In Darkest England and the Way Out*, (1890) to represent salvation for the struggling “victims of vice and poverty” that he sought to rescue (Booth 1890, frontispiece). Throughout the nineteenth century, light and illumination lent themselves to social, political and religious allegory. In part the cultural deployment of light was a response to material changes in the production of artificial light and the sources of energy that powered illumination and had started in the preceding period.

From the mid eighteenth century, artificial light replaced the earlier dependence of cities on moonlight during winter evenings, because, as Brian Bowers has shown, until the 1820s when the streets were better lit, most people did not venture out at night unless there was a full/nearly full moon to light their way (Bowers 1998, 2, 9). Within the world of work, the farming day began at half past four or 5 o'clock in the morning, and finished with supper at six, or whenever convenient. Those who worked with horses in Northern Europe, therefore, had to get up before dawn to be ready to go out at daybreak, while winter milking was often done in the dark. As G.E. and K.R. Fussell put it in their classic account of British agriculture, it had always been the practice in rural areas that “the day-long work went on till dark and later” (G.E. Fussell, K.R. Fussell 1955, 151; Armstrong 1989, 751). Those practices continued, but there was also a change. In the second half of the eighteenth century, the output of wax candles in Britain grew fivefold, while the excise returns on tallow candles doubled (using the Excise Returns, 1822). Per capita, this works out at an increase in sales of tallow candles of about a quarter between 1750 and 1800 (Falkus 1982, 218). The increased sales and taxation continued and the cost of candles was still an issue forty years later: in 1839 the *Times* included a tip about saving tallow candles by using salt. The new availability of paraffin wax from the mid-1850s, therefore, impacted on the production of beeswax and tallow: an old technology could be changed by a new source of energy, be adapted and continue. For oil lamps - Davis, Gallman and Hutchins note - alternatives such as rapeseed oil competed with whale oil (Falkus 1982, 217-9; *The Times*, 4 October 1839, 3; Davis, Gallman, Hutchins 1987, 740-1, 754, 756). In Britain, at least, as E.P. Thompson argued in his seminal account of industrialisation and time, the length of the working day was changing and seasons being evened out by capital,

and that process depended on illumination (Thompson 1967, 56-97), but the economy of illumination relied in turn on competing sources of energy.

In Fredrick Accum's *A Practical Treatise on Gas-Light* (1815) – one of the earliest expositions on the benefits of gaslight and one of the first to retell the tale of the discovery of coal gas – we see a close association between economic progress and the changing technologies of illumination (Accum 1815, 1-2). For Accum – an adherent of Adam Smith, to whom he referenced (2-3), and a researcher for the 1807 Parliamentary committee established to look into gas, who had real authority (Falkus 1982, 233 and fn. 75) – technological developments such as these were an addition to the progress of humanity, of being lifted out of a state of nature. As a matter of fact, he directly attacked Jean-Jacques Rousseau for suggesting that humanity was happier when living like the beasts “than with all the expanding knowledge of civilized life”; and “that the cultivation of their understanding had tended to degenerate their virtues” (3). Accum's was a mainstream account of the importance of technical innovation and was typical in linking that innovation to the progress of civilisation.

At the end of the nineteenth century (around 1890), an advertisement for Woodhouse & Rawson United Ltd's electric light made a related point: the new technologies of artificial electric light worked in it as a carrier of what was perceived to be ‘civilisation’ and ‘Culture’ as against ‘savage’ Nature’. On the top left of the image, we see the explorer Stanley – “on Stanley, on” – and next to him an image of a steam boat, its searchlight penetrating the homogenised African darkness. The Egyptian Sphinx has been ‘improved’, so that light can shine across the pyramids – much like the electrical displays at the World's Fairs, which often included crowd-pleasing towers and beacons of arc-light. Meanwhile, in the centre of the advert, in the heart of what was depicted as “Darkest Africa”, men used the power of electric light to help them find their way through the jungle (Snell 1880-1910, print) – it is not clear how this light shines, but it is the fact that it appears the principle that counts. The light cast not only civilised, driving out savage Nature, but within the context of colonialism it also created a sense of awe. As we see in the epigraph, taken from *The Illuminating Engineer* (1908), during the nineteenth century the use of artificial light regardless of its energy source became associated not simply with modernity, but synonymous with Western ‘civilisation’ wherever light came to be sold.

Belonging to an imperial, colonising cultural context in which light was woven into parables of progress, of the advancement of humanity and civilisation, traditional histories of artificial illumination were therefore dominated in the West by linear and heroic tales of discovery. In these accounts, named characters (e.g. Francois Pierre Ami Argand 1750-1803, William Murdock 1754-1839, Humphry Davy 1778-1829, etc.) played leading roles of scientific and technological innovation, or commercial development

and application. Teleological, linear narratives – that is, narratives of the formation of Western ‘modernity’, of the ‘progress’ of individual Western nations and emergence of Western ‘civilisation’ – overdetermined histories of illumination, because illumination so often stood in for progress/modernity/civilisation. By the mid-twentieth century there were therefore any number of progressive local histories written about the ‘coming of’ gas or electricity to various cities, and the successes or failures of the local businesses involved in their production and promotion. Each told a familiar tale of evolution, transformation and impact, and of a movement from darkness into light. But, as has been observed within the history of technology and science since the 1970s, such an approach, because it misconstrues the complexity of the day-to-day use of any technology, is fundamentally flawed (e.g. Rosenberg 1976). It is the contention of this article that pursuing such a teleological narrative not only does a disservice to the period, which was more aware of the heterogeneity of this experience than select sources such as those captured in the epigraph might suggest, but that such a narrative wilfully forgets the power and effect of imperial rhetoric for the period and the structural legacies of colonialism in the built environment.

2 Histories of Light and Civilisation

The history of the development of artificial light is well known and has been retold by, among others, William O’Dea in *The Social History of Lighting* (1958), Wolfgang Schivelbusch in *Disenchanted Night* (1988), Brian Bowers in *Lengthening the Day* (1998), Lynda Nead within *Victorian Babylon* (2000), Charles Bazerman in *The Languages of Edison’s Light* (2002), and Chris Otter in *The Victorian Eye* (2008). Economists and business historians have addressed the private and public production of gas and electricity. Geographers have been concerned with changes in lighting in the context of urban planning, while architects have discussed it regarding design (O’Dea 1958; Schivelbusch 1988; Nye 1994; Nye 1995; Hinchliffe 1996; Bowers 1998; Bazerman 2002; Otter 2008; Cordulack 2005). However, as Graeme Gooday has observed in *Domesticating Electricity* (2008), while it might be convenient to tell a teleological story by splitting the history into small chronological moments of dramatic technological change, in specific times and places, it is better to understand it as belonging to a much more complex and heterogenous history of overlapping processes and experiences, and global exchanges of energy, technology and ideas (14-9).

As social historian Asa Briggs observed in *Victorian Things* (1988), existing forms of artificial lighting continued to be used, improved upon and updated alongside all the new technologies and energies that became available throughout the nineteenth century (Briggs 1988, 402). Beyond the consumption of light, the work it permitted and the work involved in

its creation, the use of artificial light altered the material world on the large and the small scale across the nation (e.g. *The Times*, 13 October 1876, 4). The production of goods – some of them very decorative – was needed to hold the sources of light. In the domestic environment, this included candlesticks, oil lamps and their paraphernalia, cockspur and Argand gas burners, and chandeliers, made variously of wood, glass, china, papier-mâché, brass. Matches – in large part made of animal bone – for instance, were “an important new ‘Victorian thing’”, according to Briggs, “which the Victorians themselves were fascinated by; immortalised in Robert Browning’s poem ‘Meeting at Night’” (1845), and they were still very new in 1851. “Matches”, Briggs observed, “created images. Matches were associated with the need for and power of fire” (Briggs 1988, 45, 50, 69, 179, 181). There were also the more functional built spaces of light’s generation: spaces for rendering and refining fat and oil, tanks to transport kerosene oil, the structures of gas works and power plants, underground pipes, cast-iron lamp standards. This was material heterogeneity. However, because illumination and lighting paraphernalia have lent themselves to parables and narratives of modernity and progress, their more heroic, progressive histories of the emergence of new forms of lighting technology, dependent on new energies, have proven particularly seductive. This is especially the case when it comes to the shift from organic (rush and reed, wood, tallow, wax, vegetable, sperm oil) to mineral (kerosene/paraffin, coal) fuels, or visible to invisible energy (oil to electric). Both Schivelbusch and Lynda Nead, for example, remark on Bachelard’s writing about the lamp. Nead quotes him as follows:

‘the lamp is the spirit that watches over every room. It is the centre of the house. A house without a lamp is as unthinkable as a lamp without a house.’ (Nead 2000, 103)

“For Bachelard”, Nead writes that

the lamp is humanised and the experience of lamplight is an intense, psychological relationship. Time illuminated by the lamp is solemn and observes a slower tempo than the temporality of daylight or electric light. It is a period of dream, contemplation and reverie. It is what Bachelard calls: ‘igneous time’, that is ‘time that passes by burning’. (103)

The lamp and the individual are in a relationship, since for Bachelard the lamp waits, watches and guards. However, Nead and Schivelbusch interpret Bachelard differently about the transition between lamp-light and gas-light (which Bachelard does not mention). For Schivelbusch, there is a sharp transition between them, where the shift to gas-lighting, produced industrially, is likened to the shift from coach to railway. And, he

suggests that people were made uneasy by the infiltration of their homes by industry and the loss of freedom that attached to this. People could no longer become lost in the contemplation of the “‘individual’ flame of an oil-lamp or candle”, no one stared into a gas flame. For Nead, however, the move is subtler, and she extends Bachelard’s work so that “gaslight can be understood to occupy a place somewhere between the archaic form of the lamp flame and the crude modernity of the electric light” (Bachelard 1961, 8; Schivelbusch 1988, 28-9; Nead 2000, 103). In part the difference in interpretation is down to Schivelbusch’s focus on domestic lighting, and Nead’s focus on street light. But, this raises important wider questions about not only the perception of night and day, but also about the effects of different qualities and types of light.

Candle-light (like other forms of illumination), for example, created contested spaces. In fact, though churches were some of the first buildings to adopt gas light, candle-light was still ordinarily used in many of them alongside gas in the nineteenth century. Hence, one of the “weaker sex” excused herself for writing to the *Times* in 1844 about the use of “*Lucifer!*” matches to light the candles in St Paul’s Cathedral. Apparently a rather portly verger was having trouble striking his matches alight mid service, so that the congregation’s attentions were drawn to his activities: several attempts at getting a light using a loud Lucifer box and then a tendency to drop the lighted matches, which were too short to reach the wicks. The correspondent felt that this was inappropriately risible in church, aside from her apparent discomfort with the use of ‘Lucifer’ matches in that environment. The Church candles themselves carried their own contested connotations: in 1847 a more pointed letter was sent by one ‘Anti-Humbug’ castigating the Bishop for allowing candles to be lit on the altar in a Protestant country in broad daylight – near Belgrave Square. The issue resurfaced in the *Times* when it reported the Bishop of Manchester’s response to one of his clergymen lighting candles on the altar during daylight. This practice, he observed, was illegal. Indeed, a charge of brawling that had been brought against two churchwardens, who had repeatedly tried to stop a vicar from lighting candles on the altar for the 8 o’clock morning communion in 1887, was dismissed, because they were apparently not only stopping “this house from becoming a house of Baal” as one declared, but also because of the larger matter of the illegality of lighting candles in this way. The ritual meanings of light and its uses were codified in law: discourses intersected and generated their own effects (*The Times*, 4 January 1844, 3; *The Times*, 2 July 1847, 8; *The Times*, 14 September 1878, 9; *The Times*, 1 Mar 1887, 10). The history of the everyday use of lighting is therefore complex, driven by practicality, expediency, ritual, legality and materiality, not ‘modernity’ or ‘progress’. Tracing the history of light also requires us to trace subjectivity and perception – the discursive situations, the sensory and ideational qualities of different forms of illumination – not just technical accomplishment.

Nor were technical developments in artificial illumination universally applauded: far from it. In 1845 Ruskin wrote of his distress at discovering caste-iron gas lamps and gaslight within the narrow canals of Venice and under the Bridge of Sighs. He said that travelling on the Grand Canal by moonlight felt timeless. By moonlight “neither decay... nor repairs” were visible. Travelling through this vivid and revealing gas-lit Venetian landscape was not the same as travelling through the Venice he had visited ten years before. For Ruskin, gaslight (along with the railway and renovation of its monumental buildings) had wounded Venice and made it too like Liverpool and Birmingham. Ruskin wanted Venice “uninjured” (Bowers 1998, 49; Schapiro 1972, 198-9, 205). He sought a nostalgic return to what he felt was a more authentic experience that he believed was being denied him through the adoption of artificial illumination. The Venetians were clearly happy to adopt the latest form of lighting, but Ruskin’s was an uncongenial response to their ‘modernity’.

Throughout the next section, it will be argued that the depiction of multiple forms of illumination (moon-, oil-, gas-, electric-light), can be found in Victorian primary sources, even those that celebrated progress and modernity as the height of civilisation, and in them we see the heterogeneity of energy use, illumination and Victorian social life into which the technology was woven. Artists, fascinated by light, offer us sources that capture a complex set of experiences and responses to illumination, and to what was termed civilisation. Intrinsically associated with the heart of the British Empire, we turn to a representative image of Parliament and London, the River Thames, at the height of New Imperialism, as depicted by Atkinson Grimshaw (1836-1893) in *Reflections on the Thames (Westminster)* (1880). In Atkinson Grimshaw’s work, we see a hidden yet, unusually, static interpretation of both the urban and of modernity through his interest in and use of natural alongside multiple forms of artificial light. Here is a moment in time when the moon penetrates the Victorian city, and illuminates passing human life, just at the point when old and new combine in the turning of the tide, a moment of neither ebb nor flow. This is a moment of imperial, colonising power captured, a moment of arrival rather than of movement, no matter if it is heterogeneous, it exists permanently, timelessly as the apogee of Civilisation.

3 Reflections on the Thames: Moon-, Oil-, Gas- and Electric-Light

Atkinson Grimshaw, his biographer Alexander Robertson suggests, was a self-taught artist who, despite having a studio in Chelsea, London, during the mid-1880s, spent most of his life in Leeds. He exhibited at the Royal Academy in 1874, 1880, 1885 and 1886, was a popular artist in the period, painted prodigiously and was represented in London and the provinces

by the agents Thomas Agnew and Sons, Bond street, London 1871-1880. Grimshaw's work was originally bought by manufacturers and other commercially successful individuals in Leeds, but he had an eye to the interests of potential buyers and with the help of his agents his work began to be bought by a cultured London audience from the 1870s. Initially interested in and influenced by Ruskin and the Romantics (Sellars 2011; Robertson 2011, 11), by "the late 1860s" Robertson observes, "Grimshaw had turned to the depiction of moonlight, which was to become his trademark" (Robertson 2004; Robertson 2011, 5, 11-2). The quality of natural and artificial light was something that fine artists had to consider in practical terms, because of its direct impact on their work, then and now, which makes fine art a valuable primary source here, and in the nineteenth century, this focused on the act of representing light using oils or watercolours. But, the effect of moonlight was a particularly powerful element in Grimshaw's work by the time that he came to paint *Reflections on the Thames (Westminster)*, which is one of his best-known pieces.

The location of *Reflections* is unexceptional for the period. The old Westminster Bridge had been painted since the late eighteenth century and was an established vantage point for meditations upon London in other genres. For instance, Grimshaw's contemplative approach to London echoes William Wordsworth's much earlier sonnet *Composed upon Westminster Bridge, September 3, 1802*, which focused on the breaking light of the sun over the city at dawn. Moreover, though he was particularly fascinated by moonlight, Grimshaw was not alone in depictions of either the Thames or Westminster at night. He was preceded for example by Henry Pether (1800-1880)'s *Westminster Bridge by Moonlight* (c. 1862) and *The Thames and Greenwich Hospital by Moonlight* (c. 1854-1865); by Sarah Louise Kilpack (1840-1909) with *Moonlight over the Thames at Westminster* (1866); and famously by J.A.M. Whistler (1843-1904) in *Nocturne: Grey and Gold, Westminster Bridge* (c. 1871-1872). Indeed, it is rumoured that Grimshaw knew Whistler while he resided in London, and Whistler painted many studies of the Thames and nocturnes through the 1870s. Robertson reports that "Whistler is reputed to have said, 'I thought I had invented the Nocturne, until I saw Grimmy's moonlights'", though Robertson describes Grimshaw's work at the time as "perfunctory". Driven, it appears, by economic necessity to paint rapidly, Robertson says, Grimshaw's was somewhat mechanical and not always his best (Robertson 1988, 73). During this period, he painted many other locations on the Thames by moonlight, such as *Nightfall Down the Thames* (1880) and *The Thames by Moonlight with Southwark Bridge* (1884) so that you could almost piece together a visual journey along the river into and out of the Port of London. Even the word 'reflections' in the title had a precedent, as *Reflections on the Thames* was preceded by a nocturne focused on his native Leeds, Yorkshire, entitled *Reflections on the Aire: On Strike* (1879).

Reflections on the Thames in many senses may therefore seem unremarkable. However, it is the commonplace nature of this work, along with the popularity of the artist among the industrial bourgeoisie at the time, that are of value. *Reflections on the Thames* allows us to understand a little more about the cultural and social significance of different artificial and natural forms of light for the industrial and colonial élite. It captures both the experience of what could be seen in a specific place at the time, at the heart of Empire, and of a way of seeing at a moment in time when progress in illumination came to be equated with the highest state of civilisation.

In *Reflection on the Thames* there are at least four heterogeneous sources of light. The full moon; gaslight on Westminster Bridge and lighting the face of the clock that came to be called 'Big Ben'; electric arc light on the Victoria Embankment; small oil lights on moored and moving Thames barges and other vessels; and small oil (or candle) lights on a carriage. Each light is reflected on the river and the lights interpenetrate each other. In Grimshaw's painting, situated within a long history of nocturnes and landscapes, we therefore see an interplay of artificial (gas, oil, electric) light, each consumed within metropolitan culture, each generating intricate pools of bodily experience and identity. At the same time, via the Thames, Westminster Bridge and its Embankment, we see how London is cut through by the tidal river as a natural yet tightly-controlled axis of national and imperial connection. As his audience would have known, and signalled by the barges in the painting, London was a key port at the time, belonging to a profitable but risky web of transport and commerce that connected country to city, and Britain, as a maritime nation, to the world, day and night (Freeman 1983, 13-4; Armstrong, Bagwell 1983, 167; Owen 2013). As noted in a paper for the Royal Statistical Society, "in one storm in 1881 90 vessels and 343 lives were lost on our coasts" (Scrutton 1886, 1-27) but, none of this put off British investors (Doe 2010, 85-106). In *Reflections on the Thames* we therefore see how a mainstream Victorian artist, painting the River Thames at night, created a vision of London as an unsleeping, working, modern capital, with a harnessing nature, illuminated, yet shady, multifaceted, effortful and connected by flows of water and light to the nation, and of nation as connected by river and tide to (a very profitable) Empire.

Reflections on the Thames is typical of Grimshaw's work. Like his other London nocturnes such as *Nightfall Down the Thames*, it is filled with moonlight. However, whereas *Nightfall Down the Thames* is dark, dominated by the river and framed by the masts of ships in the fore and mid-ground, Grimshaw's *Reflections on the Thames* is light and framed by the sweeping structure of the Embankment. The Embankment offers the viewer a safe vantage point to look across the river and the eye is caught by the strong vertical lines of the Houses of Parliament. *Reflections*, therefore, seems to be much more about built space than *Nightfall*. Indeed,

Reflections appears to be a celebration of the highest state of civilisation as expressed through architecture and infrastructure, whereas *Nightfall*, unlit except by the moon and paused in the ebb or flow of the tide, feels much more distanced from the city, much more about the natural river and almost dislocated from the built environment. Like much of his work at the time, such as *Liverpool from Wapping* (c. 1875), *Reflections* is also bustling with people. Akin to his *Scarborough from Seats near the Grand Hotel* (1878) and *Rouen at Night* (1878), we enter *Reflections* via the isolated figure of a woman. In *Reflections*, this figure looks out from the right-hand side of the canvas, over the Embankment and up towards the moon, in a diagonal gaze that links the upper and lower, and the left and right, frames of the painting. She provides a potential narrative, genre-like play on the word 'reflections'. Unlike the two small, darkened figures of captain and mate working on a barge and dwarfed by the river in *Nightfall*, the woman of *Reflections* is surrounded by the light and life of the city, and the piece seems to thus become much more human. This is like *Reflections on the Aire: On Strike*. Each piece has a woman looking out over water within the context of an urban backdrop, a bridge, embankment or parade. Grimshaw's placing of people along the Embankment – the gazing woman, a woman with a bonnet on, another carrying a basket of oranges, and a policeman who seems to be in dialogue at a distance with the orange seller – means that *Reflections* at first glance looks as if it is about individual human experience. Just as with a genre piece, stories can be told about the possible motives of the figures.

For this reason, commentaries on *Reflections* frequently focus on the woman looking over the river to the moon and the figures near her (Robertson 1988, 82; Sellars 2011, 59). It has for instance been said that in *Reflections* Grimshaw passes social comment by including in it "a normal feature of such a location, the nightly rendezvous between street-walkers and their clients" (Robertson 1988, 82). Women casting themselves off bridges in (moral) despair was certainly a commonplace in Victorian artistic and a literary trope (Nead 1990). But, unlike a stereotypical Victorian 'prostitute', the woman in the foreground wears respectable clothing (not 'finery') and has a dog close by her side. This companion animal is a protector pointing away from river towards bustling busy Embankment life. The dog in and of itself signifies, for this point in time, that this is a respectable woman because, as Hilda Kean has observed, by this point dogs were seen as "loving members of the family" who "could confer a form of respectability on their owners" (Kean 1998, 88). The dog thus anchors the woman and is the woman's guide away from deathful water, the river Styx. The fact that the moon is perfectly clear is also significant in this respect, as the beauty of life is not marred, quite unlike the moon in G. Cruickshank's *The Drunkard's Children* (1848) discussed by Nead (Nead 1990). However, each figure is insignificant, because they belong

more to the type of stock-figure vignette commonly seen in British landscape painting from the eighteenth century than the narrative tropes of Victorian genre art. As Jane Sellars noted, the woman with a basket and the policeman both appear to have been found in an engraving by Frank Holl published in *The Graphic* in April 1873, as if they were “cut-and-pasted” (Sellars 2011, 59) – and perhaps the latter was an homage to his father who was once a policeman. This approach and their scale suggest that the figures were less important to the work than the light and reflections of light on water generated by gas-, oil- and electric-light, which are all so much more laboriously executed.

This reading is supported by the reception of the work in 1880, which focused on Grimshaw’s depiction of illumination. Unsurprisingly, Grimshaw’s reviewer for the *Leeds Mercury* adhered to the dominant narrative of progress in illumination and therefore saw in the piece gaslight dimmed in the face of electricity: “the more faint and yellow glow of the gas lamps along each side of the river and across the bridge”, as contrasting with “the electric lighting of the Embankment”. But, what caught the eye in 1880 was not this direct light, but rather “the reflection of these varied lights [moon-, gas- and electric-] upon the surface of the river” (*Leeds Mercury*, 17 April 1880). And, this is what Grimshaw captures, as indicated by the title: the light reflecting on the river water running through the city. *Reflections* is focused on the Thames, a river made safe by engineering. This is a river that Grimshaw knew, we see in his other work, to be a working river that was part of the Port of London, linked to Britain’s other coastal towns and ports, and thence the Empire (Robertson 2011, 16-7). A river that turned on the tide: on the moon.

The Victoria Embankment, built in 1870, was still relatively new when Grimshaw painted it. Its construction, along with that of the Albert Embankment (1868) and the Chelsea Embankment (1874), were watched and celebrated widely in those publications such as the *Illustrated London News* that were read by the literate, cultured Metropolitan élite who formed Grimshaw’s audience (*Illustrated London News*, 4 February 1865, 112). The structures involved reclaiming fifty-two acres of land, hid both the underground railway system being built at the time and also Joseph Bazalgette’s sewers, designed to clean up the River Thames after ‘The Great Stink’ in 1858. Though far from perfect, these sewers eradicated cholera in London and reduced the incidence of typhus and other waterborne diseases throughout the city. The product of this act of engineering – the Victoria Embankment – is presented almost as a character in *Reflections*. The orderly, modern Embankment secures not only the moral respectability, but also the bodily health of those whose passage it smooths. This is the well-lit, new safe space of Victorian social and physical order and polite pleasures: an emerging safe public space at the heart of the City. Through the figures, we see that the light creates intersecting social

spaces: the policeman uses the light to regulate those who use the light to walk or to trade. And, the electric light of the Embankment, its edges and its reflections, not the figures on whom he spent so little time, is what interested Grimshaw and his reviewers.

Along the sweeping arm of the Embankment we see some of the sixty Jablochhoff candles (arc lamps) that lit up the 1 ¼ miles from the Thames Embankment to Waterloo Bridge from 1878 to 1884 (O'Dea 1958, 99; Otter 2008, 181). Bazalgette had chosen them and directed their installation. In London in the 1870-80s, by the time Grimshaw was working, Londoners were used to artificial light. When the London gas workers went on strike in 1872 and the lamplighters - who cleaned as well as lit the lamps - did the same in 1875, the public response settled on the uncanny effects created by darkness, but more particularly on the uncanny blackness caused by the absence of light where it normally shone. The same was true of earlier strikes (*The Times*, 14 October 1793, 3; *The Times*, 23 September 1853, 8; *The Times*, 21 October 1875, 8). But, electricity, it was said by its supporters, was safer, cleaner, more stable, more adaptable, and gave a more brilliant/whiter light than gas (Nye 1994, 2, 5-6, 17, 31, 243).

Schivelbusch suggests that, by the time that electricity had been developed, gas had therefore come to be seen as "dirty" and was on its way out (Schivelbusch 1988, 22). But, in *Reflections*, in the distance on Westminster Bridge (re-built in 1856), we see gaslight still hard at work: Grimshaw, though fascinated by the effects of the new type of light, also captured the heterogeneity of Victorian lighting within the Metropole. And, his awareness of the situation was typical. At the time, the public gave the Jablochhoff candles mixed reviews. Some thought the light too harsh. Even Bazalgette himself was unhappy with the Jablochhoff candles. They tended to cast their light upwards, and to go out (their operation was complex, both in terms of each individual lamp and the infrastructure) and, by the mid-1880s, the experiment with the electric arc lights had failed (Otter 2008, 181). The satirical Metropolitan *Punch* similarly treated the debate about gas and electric light as a familiar old chestnut throughout the period of the experiment (Burnard 1879, 279; Taylor, Sketchley 1878, 287). Each new system of illumination had its supporters and detractors, and once adopted co-existed with previous forms.

The *Times*, for example, had been full of articles and notices recording the steady adoption of gaslight from 1809, when it was first introduced in Pall Mall. In 1814, it was installed in the city of Westminster, and by 1823 there were 215 miles of London's streets lit by gas (Bowers 1998, 49; O'Dea 1958, 98). Accum cited users who described gaslight "the brilliancy of which, when contrasted with our former lights, bears the same comparison to them as a bright summer sunshine does to a murky November day." There is, he went on "no other kind of light so well calculated for being made the subject of splendid illuminations" (Accum 1815,

72, 103-4). By 1820 there was gaslight in 20 major towns in the UK; by 1840 it was present in 200, and by 1849 there were few towns without gas in Britain (Bowers 1998, 49; Millward, Ward 1991, 125-6). And, once proven, gas had staying power. When it was built, the clock designed by Pugin for the Houses of Parliament was gas-lit in 1860 and remained so until 1906, though the House of Lords was lit by electricity in 1883; the House of Commons was only lit by electricity in 1912. Hence, we still see gaslight in *Reflections* not just dimly on Westminster Bridge, but also on the Embankment, in a circle of light embedded within Big Ben, balanced against the circle of a Jablochhoff Candle and the circle of the full moon.

Gas was dangerous: many accidents were reported in the *Times* throughout the nineteenth century, despite improvements in the technology; for example, there were many explosions, one of which resulted in Briton Ferry, Glamorganshire, resorting to candlelight in 1890 (*The Times*, 2 January 1890, 3) – candles persisted too, not just in church. Yet, Accum had equally forcefully given repeated assurances in his day that the new source of artificial light would be safer than the existing forms of artificial illumination and, like the supporters of electric light who came after him, cited lower insurance premiums as his proof (Accum 1815; Falkus 1982, 220). Regardless of the energy source, what were considered improvements in the technology of illumination among apologists, and the attempt to persuade a reluctant public of their advantages, therefore, gave rise to a very particular language of comparison between new and old, which stressed the utility, safety and value of the nascent form illumination. The enthusiasts in their enthusiasm echoed the expected, anticipated concerns of potential consumers, and the language captured the hegemonic influence of positivism at the time. Detractors worked to the same script, as we see in Ruskin's response to gaslight in Venice: a script centred on modernisation. So commonplace was the association of artificial light with the idea of progress that writers for the periodical press, whenever they did not have a stake in the success of any particular form of illumination, played on the certain knowledge that their readers were familiar with the form of the debate. Therefore, in 1871, *Punch* asked, "will Gas Lamps be as Oil Lamps, and Electric Lamps as Gas Lamps?" (Sketchley 1879, 301) in the full expectation that *Punch's* audience would recognise and laugh at the vast array of arguments for and against each type of light.

Artificial illumination, therefore, became part of the established language of 'civilisation', Western 'achievement' and 'modernity'. But, materially, emerging forms of illumination, as they developed, were also continuously absorbed into the built environment of the Victorian city, the (new) Westminster Bridge, the Palace of Westminster and Big Ben (1858), the underground system, and the Embankment. It is this normality, the everyday, however messy embeddedness of all forms of artificial light within the whole built spaces of Victorian life that is captured in the work of typical

Victorian artists like Grimshaw, not just its newest form and this is important to anyone studying the nineteenth century. Moreover, Grimshaw also asks us to make use of it to pause and to reflect on the river, the natural time of the tide, on the moon that directs the tide and on moonlight. These reflections on the river bring the audience's attention to the grander narratives of water's ebb and flow that penetrated the port and city of London and cut across small human time into the global flows of the wider world. Heterogeneity was part of the lifeblood of the Metropole.

The experience captured by Grimshaw of heterogeneous continuity rather than of linear change, including continuity with nature, must be taken seriously as a part of the Victorian representation of the highest state of Civilisation. Empire was about stability as well as change and that stability could be cluttered with old forms of steady and persistent progress, as well as new, and with natural resources too. Here is stillness and peace allowing reflection amid modernity; by the river, human time and natural time are caught together, and it is natural time, tide and moon that dominate the canvas. In this way, the city is depicted as part of and connected to Nature, and to the wider world. In *Reflections* as the reviewer in the *Leeds Mercury* saw, light causes us to pause rather than to progress. Moonlight (natural light) outweighs even the new Jablochhoff arc lamps on the Embankment. On the river, while the Embankment in the foreground celebrates regulation and control, on water each light intermingles and ripples away on the tide. Through reflection of light on water, a state of Nature returns to the City, and through it the city of London connects back to a worldwide system of trade and colonial endeavour, as a result universalised, naturalised by moonlight.

4 Concluding Remarks: Languages of Water and of Light

This paper explores the uses, the meanings of artificial illumination in the West as they relate to progress, modernity and therefore civilisation and by extension to colonialism during the nineteenth century. This is discussed through the lens of narratives of the progress of illumination in Victorian Britain and Atkinson Grimshaw's *Reflections on the Thames* as a typical work of the period. It thereby places the painting by a British artist, who was popular among the cultured élite of the period, into the context of Western parables and narratives of light and lighting during the nineteenth century. This enriches and extends recent work by historians of science and technology that have problematized teleological histories of illumination, and enables us to re-read the cultural history of illumination in such a way so as to step away from positivist accounts of illumination as a form of progress or of modernity (be that modernity liked or disliked) to see the heterogeneity of illumination in practice. Through this study, we have also

seen that we may recognise that heterogeneity within the Metropolitan heart of Empire can be captured as a stable point or moment in time as equally representative of Civilisation.

We have seen that, rather than being a work of art that focused on individual stories, such as that of the woman who gazes across the Thames to the moon, Grimshaw's *Reflections* is a piece that captures Victorian perceptions of and questions about modernity through the established language of illumination. As a work of its period, it celebrates the achievements of the Victorians as representing the highest state of civilisation. A new and essential structure at the heart of London, the Embankment controlled flows of water, disease and health, incorporated illumination as a necessary part of a progressive built environment, and offered new spaces of civilisation, transport, commerce and conversation by the River Thames, which were all essential to the smooth functioning of the Houses of Parliament that had been shut down by 'The Great Stink'. But, the painting also directs the audience's gaze back to the natural world in which they are situated and on which they depend: the moon and the tidal river Thames connecting Britain as a maritime nation, by night and day, to the wider world, an Empire that never slept.

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