

CONTEXTUALIZING PAUL'S "TIME MACHINE"

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The link between Robert Paul's 1895 patent application for a "Novel form of Exhibition or Entertainment" and H. G. Wells' story *The Time Machine* is now so firmly made that it may require some effort, and even cause some disappointment, to loosen it.¹ But to let it remain is to reinforce an "imperialist" ideology of early cinema, separating its border zones from the mass of earlier screen practices and forms of spectacle, and annexing them for an institution that still lay in the future.

The supposed connection begins with Paul's April 1896 interview for *The Era*, which reported that he had been "reading that weird romance, 'The Time Machine,' and it had suggested an entertainment to him, of which animated photographs formed an essential part."² This connection might have been forgotten, especially since Paul withdrew from the film business in 1910, had Terry Ramsaye not revived and elaborated it in a chapter entitled "Paul and 'The Time Machine'" in *A Million and One Nights*.³ There, Ramsaye states as a fact – although without any indication of source – that Paul "wrote to Wells, who went to confer with Paul at his laboratory at 44 Hatton Garden."⁴ He refers to letters sent to and received from both Paul and Wells, although the latter apparently said that he "was unable to remember details of the relation."⁵ Wells' comment may be, indeed has been, read as implying that there was some relation. But what other evidence exists?

My suggestion is that the two had little or no actual relationship, beyond Paul's reading the story by Wells around the time he filed the preliminary patent, and making some fleeting, perhaps precautionary, contact. But if this calls into question part of Ramsaye's elaborate teleology, the precursor of André Bazin's celebrated "myth of total cinema," it should not disappoint us in other respects, since I will suggest that Paul's visionary idea had numerous earlier sources of likely inspiration.

What are the ascertainable facts? The first is that Wells' story, in the last of its three main versions, was published in the *New Review* in instalments from January 1895, before appearing later that year in book form.⁶ Without reliable information about the circulation of this journal, it is difficult to judge whether or not Paul is likely to have read it first in this form. One circumstantial consideration is that the journal was relaunched in 1895 by W. E. Henley, a well-known editor and poet, and friend of Robert Louis Stevenson, who jokingly identified him as the "original" of Long John Silver in *Treasure Island*, since he had a wooden leg. Henley encouraged Wells to re-cast his basic idea yet again.⁷ From Easter 1896 Henley lived in the rapidly developing North London suburb of Muswell Hill, which is where Paul would buy land and build his studio and factory in 1898-1899. But without further knowledge of where and how the *New Review* circulated, the likelihood of Paul having read *The Time Machine* in serial form is difficult to gauge.

It was in any event published in book form by Heinemann in June 1895 and quickly acclaimed, effectively launching Wells' major career as a writer and "prophet."⁸

A second verifiable fact is that the patent application was dated 24 October 1895; and we learn from *The Era* interview that "Mr Paul had been at work for a long time on this scheme, and had discussed it here and there." If this claim is true, then he must have read the story immediately after it appeared – or perhaps the association with Wells' *Time Machine* was a retrospective rationalisation? The strangest aspect of the claim that Paul's project was "inspired" by Wells is the total absence of any reference to Wells or his story in the patent text. The main time-travel narrative trope in Wells – that his time-traveller accidentally goes forward when escaping from the Morlocks, and so becomes an inadvertent witness to the death of the natural world – is reversed and made comic by Paul: his audience will learn from the apologetic conductor that they have "overshot the mark, and travelled into the past – cue for another series of pictures."⁹

Another potential line of inquiry is the issue of authorship. In October 1895, Paul had recently had a bruising experience, the consequence of a partnership falling apart, after his break-up with Birt Acres.¹⁰ He might well have felt nervous about entering into a new partnership; and indeed there would later be a dispute with the management of the Alhambra in June 1897 over the terms of his contract.¹¹ But in 1895 would not Wells, after a hard struggle to establish himself as a writer, and having just tasted success with *Time Machine*, have wanted some recognition? At any rate, the patent proposal is strictly in the first person singular, with its only glancing reference to Wells contained in the phrase "[the audience] are given the sensation of voyaging upon a machine through time."¹² The rest deals strictly the apparatus of illusion; although it could be said that Wells already pointed in this direction with his characterisation of time travel as "a feeling exactly like that one has on a switchback – of a helpless headlong motion [...] the same horrible anticipation of an imminent smash."¹³

If Paul and Wells had little contact, beyond what both later acknowledged, does this make any difference to the significance of the *Time Machine* project?¹⁴ My conclusion is that it would not. In *The Era* interview, Paul simply says that he had been *reading The Time Machine*. According to an 1896 *Strand Magazine* article, it was while exhibiting kinoscopes at the Empire of India Exhibition, held at Earls Court from 27 May to 26 October 1895, that Paul had first "wondered if their fascinating pictures could be reproduced on a screen, so that thousands might see them at one time."¹⁵ The date of the patent application closely correlates to this time frame, and no mention is made of Wells until *The Era* interview six months later. Perhaps the rapid success of Wells' scientific romance in the interval prompted Paul to invoke it publicly, gesturing towards what we would come to recognize as a Bazinian concept of "total cinema" that was already imaginable, if far from achievable. But even if Paul seemed to be "ahead of his time" in October 1895, especially in view of what follows, we need to resist the siren call of teleology in order to understand what inspired both of these, in many ways typical, late Victorians.

Wells' essentially pessimistic vision is consistent with a vein of High Victorian apocalypticism that produced much visual and verbal art, including John Martin's spectacular Biblical paintings and, among secular novels, Edward Bulwer-Lytton's *The Coming Race* (1871) and Richard Jeffries *After London* (1885). Both of these novels in turn are probably indebted to Mary Shelley's *The Last Man* (1826) and to Bulwer-Lytton's immensely successful *The Last Days of Pompeii* (1834). But we also need to make some

distinctions here. *The Last Man* and *The Last Days of Pompeii* are infused with a sense of archaeological fantasy: these are dream narratives about visiting, respectively, the future and the past. In Shelley's tale of a shepherd in the late twenty-first century who ends his solitary wanderings in the ruins of Rome, Daguerre's coterminous invention, the Diorama,¹⁶ is invoked as a figure for imagining different phases of the past:

*Triumphal arches, the falling walls of many temples, strewed the ground at my feet. I strove, I resolved, to force myself to see the Plebian multitude and the lofty Patrician forms congregated around; and as the Diorama of ages passed across my subdued fancy, they were replaced by the modern Roman.*¹⁷

What the spectator saw in a Diorama was a series of paintings on transparent canvas, viewed through a perspectival "tunnel" under variable lighting conditions, to create a vivid impression of time passing. This novel entertainment proved popular, continuing in Paris until 1839 and in London until 1851, and spawning many branches and imitations throughout Europe and the United States.¹⁸ Bulwer-Lytton's novel equally made use of optical technology to enhance its vision of the rediscovered "city of the dead." Pompeii had been undergoing excavation for nearly a century and was an established attraction on the Grand Tour, before Bulwer-Lytton visited the archaeological site in 1833 and made architectural drawings with the aid of a camera lucida to help him describe in detail the location of his melodramatic love story, set before and during Pompeii's destruction by Vesuvius in A.D. 79.¹⁹

If the 1820s and 1830s saw an accelerated development of illusionistic technologies, the linked themes of the "last man" and the elegiac contemplation of ruins had already become prominent in Romantic art.²⁰ Although the figure of the "last man" might be traced back to John Milton's fusion of Judeo-Christian theology and classical mythology in *Paradise Lost* (1667), it was in the aftermath of the French Revolution that two works dealing with the rise and fall of empires, Constantin de Volney's *Ruins of Empire* (1789) and Jean-Baptiste de Grainville's *The Last Man* (1805), would become popular in English translation, with the former influencing Percy Shelley's *Queen Mab* and "Ozymandius." And in the same year Shelley's novel was published, a startling fragment appeared anonymously in *Blackwood's Edinburgh Magazine*, also entitled "The Last Man." This short story constitutes an early version of the nightmare experience that Wells would evoke of being trapped in a terrifying, phantasmagoric world, haunted by guilty memories and by a powerful sense of imminent personal and global extinction.²¹ However, this "last man" turns out to be the victim of a nightmare, who awakens from the "despair and dread" of contemplating a "wasted world" to see his servant. In 1877, Fyodor Dostoevsky would visit the same terrain in his *Dream of a Ridiculous Man*, which features a despairing narrator who imagines he has journeyed to another planet and corrupted its golden age. On awakening, the man determines to preach the need to love one's neighbour as one's self. Part of Dostoevsky's purpose was to restate the gospel message, especially by way of attack on the social utopianism that was gaining support in Russia; and the story has usually been interpreted as a satire on the progressivism of Nikolai Chernyshevsky's 1863 novel *What is to be Done?* which would later inspire Lenin.²²

Mikhail Bakhtin identifies Dostoevsky's story as a "Menippean satire," characterising this mode as

a genre of “ultimate questions.” [It] seeks to present a person’s ultimate, decisive words and actions [...] [It] often includes elements of social utopia, which are introduced in the form of dreams or journeys to unknown lands.²³

The romantic cult of Arcadian elegy was being overlaid by new currents of thought, both revolutionary and apocalyptic, and such Menippean satire would become increasingly important in futuristic fiction. Bulwer-Lytton’s *The Coming Race* (1871) has a mining engineer who discovers an underground people with control of a mysterious energy, “vril” (hence the popular English drink “Bovril”); but it was also a satire on contemporary ideas of evolution and emancipation, as was Jules Verne’s first novel, *Paris in the Twentieth Century*.²⁴ However, Verne’s two great apocalyptic visions of past catastrophe, which occur as episodes in the better known *Journey to the Centre of the Earth* (1864) and *20,000 Leagues Under the Sea* (1869), are essentially didactic. In the former, Axel’s vision of prehistoric creatures draws on contemporary geology and palaeontology (and in doing so refutes the religious idea of hell); while in the latter, the submariners’ discovery of the lost city could also be seen as anti-mythopoeic – this is an Atlantis that can be visited, at least in imagination, like an underwater Pompeii. Wells’ *The Time Machine* draws on both these traditions of the apocalyptic and the didactic. Having studied under Charles Darwin’s disciple T.H. Huxley, Wells was well aware of evolutionary thinking, and also of the new study of breeding and inheritance, Francis Galton’s eugenics, which underlies his conception of the polarisation of a futuristic society into drones and toilers, the Eloi and the Morlocks.

None of these scientific and social concerns, however, carry over into Paul’s “Time Machine,” which is essentially a *travelogue*, in the contemporary sense of an illustrated travel lecture, conceived as a “tour” of the future and the past. As described in the patent proposal, the set-up is strikingly similar to that of a lantern lecture, with the added novelty of seating intended to simulate movement and composite moving images to represent the different eras being visited. In addition, the familiar figure of the lecturer, or “conductor” would be on hand to narrate the whole experience. It has become conventional in accounts of Paul’s project to link it with Hale’s Tours, an entertainment launched in 1904, in which “thematic” seating and projected film simulated the experience of rail travel. But in fact there were a number of such environmental entertainments in the 1890s and early 1900s, many built around the large-scale panoramas that began to be constructed as part of a late Victorian revival of this originally Georgian form.²⁵ From 1851, Albert Smith performed his immensely popular “Ascent of Mont Blanc” panorama lecture, at the Egyptian Hall in London and on tour, while Poole’s “Mareorama” had its spectators on a simulated ship’s deck, between two moving panoramas. In this drive for narrativisation, some of the new static 360° panoramas had a “character” narrator, such as the Waterloo veteran who answered visitors’ questions at the “National Panorama” in London in 1890 – an event which also saw an American magician perform “The Mysteries of She,” presumably based on Rider Haggard’s popular 1887 novel (with its theme of time suspended), and a demonstration of the Phonograph. Other panoramas used electrical lighting effects and photographic images.

Paul’s project proposed a combination of techniques, one of which harked back to the moveable lanterns of the Phantasmagoria, another to the movable seating of the Diorama, and a third envisaged the projection of what had hitherto been Kinetoscope loops. In fact, a similar composite seems to have been mounted by Charles Close at the

Chicago World's Fair in 1893, where his "Electric Cyclorama" is said to have used "a battery of projectors, kinoscopes [!] and kinemotographs [?] hung from the ceiling in a vast chandelier."²⁶ Although the Kinetoscope was not available to project in 1893, Close appears to have exhibited some form of composite apparatus; and a similar combination, Thomas Barber's Electrorama, was shown in London at the Niagara Hall in 1898, projecting from a central tower onto a 12 meter high screen, while the Lumières showed large-scale moving pictures and colour slides at the Paris Exposition Universelle in 1900.²⁷ Clearly Paul's patent proposal was far from being an uncommon idea: indeed, if anything, it was typical of approaches to "immersive" or environmental entertainment in the 1890s, many of which proved fragile or simply impractical. In a 1978 piece, Richard Brown has criticised Paul's proposals for varying the image size as "nonsensical," perhaps forgetting how typical hybrids were of this period, and that Paul would quite possibly have been aware of the history of the lantern and its effects of changing scale.²⁸

We might, however, wonder how closely Paul had considered the actual form of the screen presentation in 1895. In reality, he only needed to establish sufficient novelty to secure the patent claim, and so a certain vagueness is understandable. The basic form of the entertainment seems closest to that offered by the Royal Polytechnic Institution, with its dazzling multiple lantern shows from 1854-1878, or the illusionistic spectacles of the Egyptian Hall, whether Smith's illustrated lectures or J.N. Maskelyne and G. A. Cooke's magic theatre.²⁹ A new form of combination spectacle had also appeared in London at the Lyceum Theatre, during Henry Irving's tenancy, making use of elaborate scenographic effects for such spectacular productions as *Faust* (1885) and *King Lear* (1992).³⁰ Reading too much into Paul's patent text may be inappropriate, but it seems to be reaching towards a combination of the phantasmagoric and the literal, with the mention of "stopping to visit" some parts of the future. Here we might recall the nineteenth century fashion for colossal London building projects, which constitute the other side of the coin of apocalypticism. John Martin, for instance, worked in both modes: in 1820, he designed a vast arching Waterloo monument that would have towered over Marylebone Road, while his painting *Pandemonium* (1845) incorporated a new design for the Thames Embankment within a scene based on *Paradise Lost*.³¹ Presumably, the vogue for such grandiose and often fanciful projects lay behind Paul's confidence in envisaging "a certain number of scenes from a hypothetical future" and the possibility of being "conducted through grounds or buildings arranged to represent exactly one of the epochs through which the spectator is supposed to be travelling."³²

Paul's project can also be read as a foreshadowing of the modern spectacular theme park. But in fact the international expositions that had proliferated after 1851 already routinely included both reproductions of historic styles of building *and* striking displays of modernity.³³ Within their perimeters, reconstructions of the past and predictions of the future were already visitable. What Paul proposed, then, could just as well be seen as a synthesis of present forms of spectacle, combined – or rationalised – around the imaginative armature of Wells' *The Time Machine*. Less an anticipation of cinema, which would aspire to a seamless, perceptual synaesthesia, Paul's proposal is a simulation, a literalisation of Wells' weird and in many ways "decadent" fable, and certainly innocent of its eugenicist pessimism. Or, indeed, of the utopian socialist thrust of William Morris' *News From Nowhere*, which portrayed a post-revolutionary London, and was reprinted no fewer than six times between 1890 and 1896.

In their respective futures, Wells and Paul would both deal in “time travel:” Wells in *The Outline of History* (1920) and in his “history of the future,” *The Shape of Things to Come* (1933), and its 1935 film version; Paul, more modestly, in his pioneering *Last Days of Pompeii* (1899) tableau and in such trick films as *The Magic Sword* (1901) and *The ? [sic] Motorist* (1906), but also in his important pioneering of the “simultaneity” of recording contemporary events, and in his scientific films.³⁴ But in 1895, these did precisely lie in the future. Thirty years later, Ramsaye chose to link what he had fashioned into “the Wells-Paul idea” with P.D. Ouspensky’s mathematically mysterious philosophy and Albert Einstein’s philosophically mysterious mathematics,” reflecting two popular currents of “new” thought. He also invoked the French astronomer Camille Flammarion, whose philosophical and mystical fantasies were becoming widely known in translation from at least the 1870s.³⁵ Flammarion observed that the time taken for light from our solar system to reach the nearest stars amounts to a virtual time machine, since the image received would necessarily be “historical” – ignoring the question of the potential observer’s temporal location. Thus, for some, the “possibility” at least of time travel or reversal was established, although in Flammarion’s cosmology it is necessarily linked with a theory of the soul leaving the body after death and being “no longer subject to the laws of matter.”³⁶ Such mixtures of physics and psychic or religious speculation were not uncommon: in Russia Nikolai Fedorov proposed a similar idea of mass resurrection, to be achieved by regulating nature and seeking salvation among the stars;³⁷ in Britain the Society for Psychical Research actively pursued scientific evidence of communication from “the other side.”³⁸ In such a climate of expectation, the metaphorical significance of film’s flexible temporality was bound to loom large.

There are other ways of analysing this conjunction of science and spectacle, which also remain within the same *Lebenswelt*. In 1907, Sigmund Freud published an analysis of William Jensen’s *Gradiva*, a novel in which a young archaeologist fantasises a relationship with a girl pictured in an ancient relief, whom he eventually discovers in a dream about Pompeii, before meeting her living counterpart in the same (real) place. As is well known, this story appealed to Freud in large part because it embodied his own interest in the “analogy between the historical fate of Pompeii (its burial and subsequent excavation) and the mental events [...] of burial by repression and excavation by analysis.”³⁹ What this might suggest, in the context of a widely shared *fin-de-siècle* fascination with the past and future which seeks to go beyond *imagining* towards *inhabiting*, is that both Wells and Paul were seeking to figure this phantasy – the one through a romantic quest tale, and the other through a “novel apparatus.” In doing so, they were no doubt, as Freud implies of both Jensen and himself, revealing much about their own unconscious motivations. The symbolism of Jensen’s *Gradiva*, as Freud notes, revolves around “digging something out of the past” – the past of childhood refigured as Pompeii – whereas we might see both Wells and Paul engaged in some form of “penetrating the future.”

So, even if Paul did *not* draw any substantial inspiration from Wells, the undisputed fact of these two *texts* of 1895, seething with anticipation of a permeable, kinaesthetic future should give us pause – not to rush into seeing these as avatars of cinema, but rather to see them as two examples of a way of thinking that cinema would increasingly engage with, but when it did so would often seem anachronistic. The line that leads through *Intolerance* (1916), *The Road to Yesterday* (1925), maybe *Dante’s Inferno* (1935) and *2001: A Space Odyssey* (1968), up to the most recent version of *The Time Machine* (directed by H. G. Wells’ great-grandson, Simon Wells, in 2002) may not be what many

would consider cinema's cutting edge, even if it resumes the important popular educational function once undertaken by the historical novel after Walter Scott and by history painting – to “re-people” the past, as Byron had termed it. And as for Wells and Paul, to become the important early 20th century figures they were, both had to re-invent themselves in quite different ways, becoming “realists” rather than the “idealists” portrayed in Ramsaye’s beguiling myth.

- 1 See, for instance, John Barnes, *The Beginnings of the Cinema in England* (Newton Abbot - New York: David & Charles - Barnes & Noble, 1976), pp. 37-40; Michael Chanan, *The Dream That Kicks: The Prehistory and Early Years of Cinema in Britain* (London: Routledge & Kegan, 1980), p. 178; Simon Popple, “The Diffuse Beam: Cinema and Change,” in Christopher Williams, (ed.), *Cinema: the Beginnings and the Future* (London: University of Westminster Press, 1996), p. 98. I must admit to strengthening this link, before questioning it here, in my *The Last Machine: Early Cinema and the Birth of the Modern World* (London: British Film Institute/British Broadcasting Corporation, 1994), pp. 28, 31.
- 2 “Chat with Mr. R. W. Paul,” *The Era* (April 25, 1896), p. 17.
- 3 Terry Ramsaye, *A Million and One Nights: A History of the Motion Picture Through 1925* (New York: Simon and Schuster, 1986 [1926]), pp. 147-162.
- 4 T. Ramsaye, *op. cit.*, p. 153.
- 5 *Ibid.*
- 6 Ramsaye dates the story to 1894. However, an earlier version of the piece, *The Chronic Argonauts*, appeared as a serial in the *Science Schools Journal* in 1888. A second version (under the new title) was serialised in the *National Observer* in 1893, before the *New Review* serial in 1895.
- 7 Jules Kosky, “The Sage of Muswell Hill,” *Hornsey Historical Society Bulletin*, no. 36 (1995), pp. 6-8.
- 8 Norman and Jeanne Mackenzie, *The Time Traveller: the Life of H. G. Wells* (London: Weidenfeld and Nicolson, 1973), pp. 106-108.
- 9 “Chat with Mr. R.W. Paul, *op. cit.*”
- 10 Birt Acres was an early film pioneer responsible for a number of cinema- and photography-oriented patents throughout the late 1890s. Notably, in 1895, Acres and Paul patented their “Kineopticon” camera.
- 11 Paul and Acres’ dispute arose over the question of how much each had contributed to developing their camera during mid-1895, and resulted in a permanent feud. In 1897, Paul successfully sued the Alhambra over their restrictive interpretation of his contract to show films of Queen Victoria’s Jubilee. The episode is discussed in John Barnes, *The Rise of the Cinema in Britain* (London: Bishopsgate Press, 1983), pp. 191-193.
- 12 Patent application, cited in T. Ramsaye, *op. cit.*, p. 155.
- 13 H. G. Wells, *The Time Machine*, in *The Complete Short Stories of H. G. Wells* (London: Ernest Benn, 1970 [1927]), p. 24.
- 14 Paul referred to “some assistance from Mr. H. G. Wells” in a letter to *The Bioscope* (February 19, 1914), p. 743, and later wrote that “Mr. Wells called on me, by request, to discuss the possibilities and he made some suggestions as to the scenes,” in a letter to Oskar Messter, dated 5 August 1932, (Bundesarchiv-Filmarchiv). Wells wrote in 1929 that “it seems – I had completely forgotten about it until I was reminded of it by Mr. Terry Ramsaye’s history of the film

- Mr. Robert W. Paul and myself had initiated a patent application for a *Time Machine* that anticipated most of the stock methods and devices of the screen drama,” Introductory Chapter, *The King Who Was a King* (London: Benn, 1929), p. 10. Both accounts bear clear traces of Ramsay’s prompting. (I am grateful to John Barnes for drawing these to my attention after my paper was first given in Montréal at the 7th Congress of Domitor, June, 2002).
- 15 “The Prince’s Derby Shown by Lightning Photography,” *The Strand Magazine*, Vol. 12 (August 1896), p. 134.
 - 16 Louis Daguerre, soon to be known as a pioneer of photography, opened his Diorama in Paris in 1822 and a London equivalent in the following year, which presumably Mary Shelley could have visited.
 - 17 Mary Shelley, *The Last Man* (London: Henry Colburn, 1826), Vol. 3, chapter 10.
 - 18 Ralph Hyde, *Panoromania! The Art and Entertainment of the “All-Embracing” View* (London: Trefoil/Barbican Art Gallery, 1988), p. 112.
 - 19 For an invaluable review of Pompeian fiction in different media, see Maria Wyke, *Projecting the Past: Ancient Rome, Cinema, and History* (London: Routledge, 1997), chapter 6.
 - 20 Francis Fukuyama, *The End of History and the Last Man* (London: Penguin Books, 1992), pp. 300-305. Fukuyama traces the philosophical genealogy of the “last man” from Hegel, for whom the end of history is marked by the reconciliation of master and slave, to Nietzsche, whose last man is the victorious slave of *Beyond Good and Evil*, rather than the lonely prophet of *Zarathustra*. Democratic man, who has settled for long-term self-interest and happiness, no longer feels the shame of not being able to rise above material satisfactions.
 - 21 Anonymous, “The Last Man,” *Blackwood’s Edinburgh Magazine*, Vol. 19 (March 1826), pp. 284-286.
 - 22 For a discussion of the Dostoevsky story in relation to science fiction, see my “Down to Earth: *Aelita* Relocated,” in Richard Taylor, Ian Christie (eds.), *Inside the Film Factory: New Approaches to Russian and Soviet Cinema* (London: Routledge, 1991), pp. 98-100.
 - 23 Mikhail M. Bakhtin, *Problemy poetiki Dostoevskogo* (1963); trans. by R. W. Rotsel as *Problems of Dostoevsky’s Poetics* (Ann Arbor: Michigan University Press, 1973), p. 122.
 - 24 Jules Verne, *Paris dans le XXe siècle* (Paris: Hachette, 1994). Written by Verne in 1863, before embarking on his *Voyages extraordinaires*, but rejected by his publisher Hetzel.
 - 25 R. Hyde, *op. cit.*, pp. 169ff.
 - 26 R. Hyde, *op. cit.*, p. 181.
 - 27 On another moving picture display shown at the Chicago Columbian Exhibition, see J. A. Sokalski, “Living Motion Pictures: The Panoramic Stage and Pre-Cinematic Show Technology,” *Living Pictures*, Vol. 1, no. 2 (2001), pp. 59-68.
 - 28 Richard Brown, “England’s First Film Shows,” *British Journal of Photography* (March 31, 1978), p. 274. Moveable lanterns, sometimes on wheels, projecting from behind the screen were an essential feature of the Phantasmagoria of c.1798; and the effect was described by Sir David Brewster in his *Letters on Natural Magic* (1834).
 - 29 Maskelyne and Cooke made the Egyptian Hall renowned as “England’s home of mystery” between 1874 and 1904, with their distinctive form of dramatized illusion and conjuring. They incorporated David Devant’s use of Paul’s Theatrograph in 1896 and Maskelyne went on to make films himself.
 - 30 On Irving’s production style, and *Faust* in particular, see Michael R. Booth, *Victorian Spectacular Theatre 1850-1910* (London: Routledge, 1981), chapter 4; also Martin Meisel, *Realizations* (Princeton: Princeton University Press, 1983), chapter 19 on Irving’s *Lear*.
 - 31 Felix Barker and Ralph Hyde, *London As It Might Have Been* (London: John Murray, 1995), p. 88.

- 32 Paul, Patent proposal, cited in T. Ramsaye, *op. cit.*, p. 157.
- 33 Examples would include the buildings created for the Columbian Exposition in Chicago, 1893; the many displays of modern technology at the Exposition Universelle in Paris, 1900; an Eskimo village and Palace of Electricity at the Pan-American Exposition in Buffalo, 1901; a traditional "Russian street," designed by Fedor Shektel for the Glasgow International Exhibition, 1901. See my *The Last Machine, cit.*, chapter 4, "Real Lives."
- 34 On the range of Paul's work, see my forthcoming *The Time Traveller: Robert Paul and the Early Moving Picture Business* (Chicago: Chicago University Press, 2004).
- 35 Camille Flammarion (1842-1925) was both a central figure in French scientific astronomy and a prolific writer of scientific fantasy, combining Pythagorean and Bergsonian themes in such works as *The Plurality of Inhabited Worlds* (*La pluralité des mondes habités*, 1862), *Stories of Infinity* (*Récits de l'infini*, 1872) and, most famously, *Lumen* (1887). An article in the *Atlantic Monthly*, Vol. 33, no. 198 (April 1874), welcomed *Stories of Infinity* as "a very pretty romance of the heavens, enriched all along with weighty reflexions [...] which cannot fail to impress the reader very vividly, especially since they all appear to be sustained by this inflexible anatomy of established astronomical law." [?!]
- 36 Camille Flammarion, "First Conversation: Resurrectio Praeteriti," *Lumen*; authorised translation by A.A.M. and R.M. (New York: Dodd, Mead and Co., 1897).
- 37 See Nikolai Fedoriovich Fedorov, *What Was Man Created For?*, edited and translated by Elizabeth Koutaissoff and Marilyn Minto (Lausanne: Honeyglen Publishing/L'Age d'Homme, 1990); also my "Down to Earth: *Aelita* Relocated," *op. cit.*
- 38 On these and other elements of "English time culture" see my *A Matter of Life and Death* (London: British Film Institute, 2000), pp. 24-28.
- 39 From the Introduction by Albert Dickson to Sigmund Freud, "Delusions and Dreams in Jensen's *Gradiva*," in *Art and Literature*, The Penguin Freud Library, Vol. 14 (London: Penguin, 1990 [SE 9, 1-95]), p. 30.