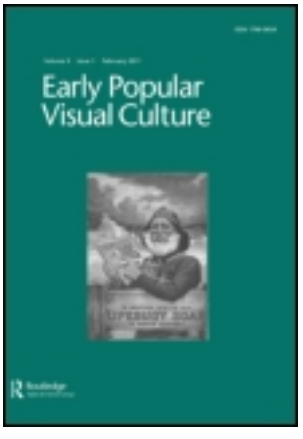

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A 'proper point of view': The panorama and some of its early media iterations

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The panorama entered the world not as a visual format but as a claim: to lure viewers into seeing in a particular way. Robert Barker's 1787 patent for a 360-degree painting of 'nature at a glance' (*Nature à Coup d'Oeil*) emphasized the construction of a 'proper point of view' as a means of making the viewer 'feel as if really on the spot'. This situating strategy would, over the following centuries, take many forms within the world of the painted panorama and its photographic, magic lantern, and cinematic counterparts. This essay charts some of the unexpected twists and turns of this strategy, exploring among others the moving panorama (both as a parallel development to the cinematic moving picture and as deployed by the film medium as a background to suggest movement) and the relations between the spatial promise of the late nineteenth-century stereoscope and that most populous of early motion picture titles, the panorama. The essay focuses on changing technologies and strategies for achieving Barker's initial goals, while attending to the implications for the viewer. Drawing from the observations of scholars as diverse as Bentham, Foucault, and Crary, the essay uses the various iterations of the panorama to explore the implications of a particularly rich strand of technologies of seeing.

Keywords: panorama; early film; actualities; stereoscope; regimes of seeing

'I don't have eyes in the back of my head' is a well-known expression. The person who does want to know what the world would look like with eyes in the back of their head should visit the Panorama Mesdag in The Hague in the upcoming months. Here, the Dutch photographer Jan van der Woning and 10 foreign photographers, members of the IQTVRA (International Quick Time Virtual Reality Association), show their panoramic pictures of 360 degrees or more.[1]

Robert Barker, whose 1787 patent laid the groundwork for panoramas including Mesdag, would have been surprised. Barker's panorama worked in part by exploiting the tension between the availability of a complete scene and the necessarily incomplete sight available from any one viewing position.[2] Like the real world in which the viewer found themselves, the excess of visual information in the 360-degree panorama enabled a sense of immersion, allowing the viewer to turn in any direction and discover a continuous, expansive vista. The meaning of the term 'panorama' has obviously changed, and the goal in the pages ahead is to explore

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several of the early twists and turns that Barker's idea underwent, and in particular to look at how these ideas manifest themselves in the formative development of other media, film in particular. The Mesdag Panorama,[3] constructed nearly 100 years after Robert Barker filed his patent for the system, is one of the few remaining 'old-style' panoramas and consistent with the dual spectacular and didactic functions of the historical panorama. As such, it is also the site of frequent exhibitions that address such broadly relevant issues as cultural history, art history, and the changing nature of the panoramic – for example, the IQTVRA digital panoramic photographic show.[4] While by no means asserting a canonic claim, Mesdag's exhibition of digital 'virtual reality' photography raises questions regarding the relationship of the panoramic to new representation technologies and the contours that the panorama occupies in our current visual culture.

Re-reading Barker's claims from a contemporary perspective, we might today say that he was about as close as someone in the late eighteenth century could get to describing 'virtual reality' and the goal of creating a state of immersion for the viewer. Such conceptual reframing has much to offer, although the term 'virtual reality' brings with it a set of semantic ambiguities (a representational technology or a perceived effect?). It is certainly fair enough to assert an extremely long-term human obsession with both the immersive and the virtual – one moreover manifest in constellations of physical objects as well as in the stimulation of psychological states (Klein 2004). In this essay, however, I've chosen to focus on the more limited domain of the panoramic because it refers to a particular set of strategies for achieving this virtual and immersive state, standing as a technological constellation that enjoyed a certain prominence and persistence (compared with the many one-offs that both preceded it and followed in its wake). And it brings with it a particular set of permutations and influences that claim it as reference, and therefore offers a red thread of interests and strategies that can be followed across history and media forms. Although this essay will make reference to the breadth of the panorama's manifestations, it will focus on the changing technological and conceptual parameters of the concept during the nineteenth century – in particular on its relationship to the motion picture during its early years, when this then 'new' medium took form. In this context, the panorama – the most populous of early motion picture titles – helps to articulate a now largely lost understanding of the film medium's relationship to space, time and event. And it maps a promise and desire that our contemporary media systems continue to address, albeit in very different ways.

The panorama entered the world not as a visual format but as a claim: to lure viewers into a particular relationship with their visual environment. Robert Barker's 1787 patent for a 360-degree painting emphasized the construction of 'a proper point of view' with the stated goal of making the viewer 'feel as if really on the very spot.'[5] Central to achieving that goal was a painted canvas arranged so that the viewer, turning fully around, would see a seamless representation of reality. The bulk of the patent specifies 'the proper disposition of the whole' so essential to what Barker would shortly rename the panorama, including lighting arrangements, masking devices, viewing platform, stairs and entrance, and even ventilation systems. Over the years, however, within the world of the painted panorama and its photographic, cinematic and digitally enabled counterparts, this conceit has been weakened to the point where it merely indicates an extended rectilinear composition. And the elaborate framing devices and lighting strategies so important to Barker's patent have been eradicated altogether. Those who only know of the

panorama through the settings on their digital cameras might not imagine the range of practices that the term once entailed. Barker's initial patent also addressed the movement of the spectator ('an observer turning quite round'). However precedent technologies such as the Eidophusikon, and subsequent deployments such as the moving panorama and its variations, plus certain forms of motion picture (filmic panoramas) and today's virtual panoramas, all achieved Barker's goal by exploiting movement of the image itself. Such deployments might be seen as fulfilments of the panorama's etymological claim (deriving from the ancient Greek for 'complete view'[6]); but, as already suggested by the terms 'virtual reality' and 'immersion', they might also be seen as evidence of one of the long term tropes in media development – one that served as both driver and site of application for a spectrum of media technologies.[7]

The term 'panorama' itself betrays a similar slippage. According to the *Oxford English Dictionary*, the term was coined in England with Barker's use of it following his 1787 patent. Although initial popularity of the panorama-craze dimmed a bit after the turn of the century, the term began to pick up new meanings, such as a 'complete or comprehensive survey or presentation of a subject', evident in book titles such as *The Political Panorama* (1801), *The Panorama of Youth* (1806), and *Literary Panorama* (1806). Also around 1802 (by which point Barker's patent had expired), it was used for 'an unbroken view of a whole region surrounding an observer.' By 1813, it acquired an additional meaning: a 'continually moving scene or mental vision in which life passes before ones eyes'. As with the practice of the panorama, the linguistic invocation of panorama slowly departed from Barker's definitional intent, eliding the elaborate framing of an image so as to make one feel on the spot for the effect itself.

Another argument for the notion of panorama as 'complete view' might be made on the basis of the neologism's early spin-offs. Shortly after Barker's introduction of the term 'panorama', it was used in book titles to refer to comprehensive coverage – for example, *The Political Panorama* (1801), *The Panorama of Youth* (1806), and *Literary Panorama* (1806).

Panorama: The wide view

The use of expansive linear space for representational purposes has far deeper historical precedents than Barker's late eighteenth-century efforts. A millennium or so before the Christian era, the Chinese, Egyptians and Babylonians charted historical and mythological events in elongated visual narratives. The Romans similarly chronicled civic events with linear *bas relief* renderings on the sides of buildings and burial crypts; twelfth-century Japanese *emaki* or narrative picture scroll provided flowing narratives (described as 'cinematic' by New York's Metropolitan Museum of Art); and the Sioux *waniyetu wowapi* or 'winter count' constructed a chronicle of events in a long spiral fashion on a hide. The notion of using an extended linear space to represent long narratives or chronicles seems both historically and culturally pervasive, but most of these deployments rely upon a sequential use of images, repeating particular characters or locations in series as the story unfolds. This redundancy of certain narrative elements and the attempt to use linear space as a way of expressing duration and thus the unfolding of time distinguishes these formally similar renderings from Barker's 'nature at a glance'.

Sequence, of course, would play a role in the construction of early photographic panoramas, where a series of carefully matched photographs would be pieced together into a much wider whole. But the project of the panorama required painstaking efforts to efface the sutures between the frames and mask the signs of temporal disjunction, creating the illusion of a spatial – and temporal – unity. In this sense, a far more appropriate predecessor to Barker's notion might seem to be found in sixteenth- and seventeenth-century European maps and urban portraits, which regularly took the form of elongated rectangles.[8] However, even these instances – though sharing much with the mode of representation that we today consider panoramic – lacked the crucial framing and masking devices so central to Barker's patent, and more importantly to his intended effect. Barker claimed that the panorama was 'an improvement of painting, which relieves that sublime art from a restraint it has always laboured under'.[9] And judging from his patent's overwhelming concern with ways of enhancing the illusion of presence by effacing any sense of pictorial limits, the 'restraint' that Barker sought to relieve was more elaborate than simply expanding the contours of the golden rectangle.

If the neither the linear sequential visual narrative nor the wide-format image precisely captures the spirit of Barker's notion of the panoramic, we might pursue a different route. Around 1890, at roughly the same time that Barker was promoting his panorama, Jeremy Bentham began to pursue his plans for the panopticon.[10] As Michel Foucault and Jonathan Crary remind us, Bentham's project emerged as part of a regime of visual control characteristic of the modern era; Bentham himself described his project as 'a new mode of obtaining power of mind over mind, in a quantity hitherto without example' (Bentham 1995). Allegedly inspired by a Parisian military school designed a few years earlier by his brother Samuel, Bentham's panopticon shared similar architectural forms and conceptual goals with the panorama, relying for its effects on certain 'staging strategies'. There were, however, several key differences. Whereas the panorama fixed nature within its controlling gaze, the panopticon fixed human behavior. The panorama's embrace of nature was of course illusory, and its goal was the simulation of presence through a series of artful conceits, masking its project of representation. The panopticon, by contrast, placed both the observer (the guards) and the observed (their prisoners) in a mutually entrapping relationship – one that was predicated on the very real status of both. Whereas the panorama sought to fix a complete view, the panopticon sought to enable the act of viewing completely. And just as the panoramic achieved its 'complete' view through artifice, the staging strategies of the panopticon used artifice to create the spectre of an all-seeing subject, masking the reality of an always partial vision. Despite such formal similarities as circular architectural structures with centrally positioned viewers, despite their mutual dependence on staging practices to enhance their effects, and despite their historical coincidence, the projects of the panorama and the panopticon couldn't have been more different: one convincing the viewer that they had visual access to everything that could be seen from a particular vantage-point, and the other convincing the viewed that they were always being seen.

If there are reasons to challenge the appropriateness of Babylonian wall murals, seventeenth-century engraved cityscapes, and Bentham's panopticon as the panorama's conceptual relatives, where else might we look? One direction might be to consider Philippe Jacques de Loutherbourg's Eidophusikon, launched six years before Barker's patent in London (1781). A painter, like Barker, as well as a

scenographer, Loutherbourg designed an entertainment around a battery of technologies including lighting devices, clockwork-driven automata, moving scenery and sound. Described in the press as 'moving pictures, representing phenomena of nature', the Eidophusikon occupied a small stage, seven feet wide, four feet high, and eight feet deep.[11] From dramatic shipwrecks to an illustrated passage from Milton's *Paradise Lost*, the events depicted were described by period audiences in terms that Barker would echo in his patent. Iain McCalman reports the story of a young artist, William Pyne, who upon experiencing the depiction of a shipwreck, 'feels he is actually there' and nearly cries out in terror. Carefully staged mechanicals, lighting, and visual effects combined to evoke a sense of presence, of being an observer 'as if really on the very spot'. Like Barker's 'view of any country or situation', the site of visual engagement was the spectacle of nature itself, rather than investment in the unfolding of a story. While I am not aware of any evidence suggesting that Edinburgh-based Robert Barker had any knowledge of Loutherbourg's London activities, the idea was clearly in the air, with other related devices such as Franz Niklaus König's *diaphanorama* and Daguerre's diorama closely following in the early nineteenth century. In each of these cases and Barker's as well, elaborate staging strategies were deployed to create a sense of presence, situating the viewer before a vista or event as witness. Whether simulated through lighting design or enabled through moving canvas, movement, sharpened by framing devices and foreground stage elements, played a crucial role in creating the desired effect. Narrative engagement seems to have been distinctly secondary, overshadowed by what Tom Gunning, in the context of early cinema, called 'attractions' or the sensations of showing and seeing (Gunning 1983).[12]

The staging techniques developed by Loutherbourg, König and Daguerre all addressed in different ways some of Barker's key concerns – 'perfecting an entire view of any country or situation', offering 'a proper disposition of the whole', making the viewer 'feel as if really on the very spot', and doing so through a combination of the graphic arts, stagecraft and motion. Yet while these various technologies succeeded in doing much that Barker sought, they were in themselves not strictly panoramic, failing Barker's requirement that the scene should be displayed as it 'appears to an observer turning quite round'. Yet these ideas would continue to mix and transform, by 1900 appearing in devices that seemed to fulfil the spirit of Barker's panorama – though in unexpected ways, as we shall shortly see. But before moving on, it is important to acknowledge that Barker's ideas regarding a panorama in the round were manifestly fulfilled by his own endeavours, as evidenced by the panoramas he built in the nineteenth century; after the expiration of his patent in 1801, the idea was copied and robustly exploited, sometimes taking on other names (the mid-nineteenth-century Cyclorama, for example) and sometimes being built around other media. Charles A. Close projected images over a 360-degree surface using magic lanterns with his Electronic Cyclorama at the 1893 Chicago World's Fair. At roughly the same time, Thomas Barber's Electrorama cashed in on the mania for things electric and showed images some 40 feet high and 400 feet in circumference; and by 1901, the Lumière Brothers were busy with their circular projection system for still images, the Photorama (Hyde 1988; see also Kuchenbuch 1992). Raoul Grimoin-Sanson's Cinéorama, patented two years after projected images first graced a Parisian screen (1897), pushed the notion of the panorama in a conceptually different direction when it made its appearance at the 1900 World Exposition in Paris. The Cinéorama displayed moving images on the walls

of a circular space, all 360 degrees covered by the images produced by 10 synchronized 70-mm motion picture projectors. Consistent with Barker's patent, it relied upon an elaborate staging conceit, masking the top of the screen with balloon fabric and rigging, and the bottom with the sides of a wicker gondola adorned with ballast. The plan was to enable some 200 spectators on the gondola-like platform to experience a balloon ride over Paris.[13]

Grimoin-Sanson's Cinéorama was a particularly interesting development, since it seemed at once to adhere to the most literal interpretation of Barker's panorama – a specially designed round room, a seamless illusion ('as it appears to an observer turning quite round'), and elaborate staging devices that fulfil the precise terms of the patent; and yet, by relying for its effect on projected moving images, it simultaneously embraced the strategies mapped out by the work of Loutherbourg, König and Daguerre. The Paris Exposition also offered a number of related devices, such as the Trans-Siberian Railway panorama and the Mareorama, that deployed the idea of the 'moving' panorama in new ways while making use of extensive framing devices, with the intent of making 'the viewer feel as if really on the very spot'. Just as the panorama enabled the casual visitor to virtually reposition themselves to a distant location (or, in the case of Panorama Mesdag, a short walk away from the beach it represents), and just as the Cinéorama gave its visitors a bird's-eye vision of Paris, the Trans-Siberian Railway panorama used a moving panorama to simulate a train ride from Moscow to Beijing and the Mareorama offered its viewers a sea voyage from Marseille to Yokohama. Armchair travel had never been easier.

Commissioned by the Compagnie Internationale des Wagons-Lits, and directed by Pawel Yakovlevich Pyasetsky, *The Trans-Siberian Railway* was shown in the Exposition's Russian pavilion and managed to compress the 14-day rail trip into something closer to an hour. Viewers either sat inside three train coaches (complete with saloons and dining rooms), or in rows of seats placed outside the cars, watching multiple layers of moving objects and scrolling paintings pass by the train's windows.

> The nearest objects were sand, rocks, and boulders attached to a horizontal belt that moved at a speed of 1000 feet per minute. Next was a low screen painted with shrubs and brush, which moved at 400 feet per minute. Behind that, another screen with paintings of more distant scenery moved at 130 feet per minute. The final screen showed mountains, forests, and cities; it was 25 feet tall and 350 feet long, and moved just 16 feet per minute. The net result of these four layers was to produce a simulated perspective of great depth, via motion parallax.[14]

Although not fully completed by the time of the exposition, Pyasetsky received the order of the Legion of Honour and his exhibit was awarded a Gold Medal.[15]

The Mareorama, designed by Hugo d'Alesi, also combined moving panoramic paintings with elaborate mechanical framing devices to provide a synoptic if apparently seamless ocean journey over large distances. Some 700 viewers sat on a large replica of a passenger ship deck (some 230 feet long), designed to pitch and roll thanks to an elaborate series of pistons and motors. To complete the illusion, lighting and sound effects, costumed actors, and even olfactory stimulants accompanied the travellers on their journey, visible thanks to two enormous canvases that framed the sides of the ship. Each panoramic painting was nearly 2500 feet long and over 40 feet tall. Mounted on large cylinders, the paintings 'transported' spectators over the course of the simulated journey. As in Barker's panorama, the Cinéorama, and

the Trans-Siberian Railway, elaborate masking concealed the cylinders as well as the top and bottom of the panoramic painting.

These devices stand as early milestones in a tradition that includes George Hale's Tours of the World (early cinema exhibition spaces in the form of railroad passenger cars with a front projections of 'phantom train rides') (Fielding 1970) and their late twentieth-century reincarnation in amusements from London's Trocadero to Los Angeles' Disneyland. In each case, motion of the panoramic image substitutes for the motion of the viewer 'turning quite round' mentioned by Barker in his initial patent, and elaborate framing strategies mask the limits of the image while relatively subtle movements of the viewing platform magnify the illusion of 'being on the very spot'. And in each case, we see new combinations of technology being used to fulfil Barker's ambitions regarding the panorama. With the exception of Hale's Tours, which was relatively widespread, each of these devices – and the images it showed – was unique, purpose-built for an occasion. And although widely publicized and generally well received, their elaborate handcrafted construction and limited programming potentials seem to have inspired few competitors. The marketing success of Hale's Tours, by contrast, in part resided in its relatively low front-end investment requirements. Relying essentially on a slightly modified railway passenger car and motion pictures, it was capable of changing its attractions on a regular basis for little more than the cost of film.

Let us now shift from considering the broad definitions and techniques of the panorama as articulated by Barker and as improvised upon by various other designers, to a closer look at one medium and its process of adopting the panoramic spirit: the 'new' medium of film.

Panorama: The cinematic view

'Panorama' or 'panoramic views' by title constitute the single largest entry among films copyrighted in the United States between 1896 and 1912, with the preponderance of titles referring to films registered before 1906. Such a concentration of titles suggests that the panorama constituted the most populous film category of the early production period. Given the deep history of the term, and, as we've seen, the various ways in which its principles found form in related technological constellations, the manner in which the new medium of film positioned itself among these various possibilities can provide a insight into not only the processes of remediation – or, how the film medium addressed the painterly or architectural or mechanical panorama; and how film found its own way in the early period – but also how the medium's relationship to the world was imagined.

Filmed panoramas, as we will see, departed from the mode of depiction familiar from horizontal painted panoramas and even such devices as the Mareorama and Trans-Siberian Railway. Instead, they explored space in many different ways – horizontally, vertically, and by tracking shots that penetrated the depths of Albertian perspective as if exploring the spaces made popular by the late nineteenth-century stereograph. Moreover, they charted the texture of movement itself, in the process offering new pleasures and presences than had been available to the painted or photographed static panorama, picking up on the textures of the Mareorama. Despite these differences, the cinematic panorama as a cultural practice bore many similarities to the much older panoramic tradition. Issues such as the panorama's cycles of popularity, the shifting class and age of its audiences, its placement within

a pedagogical framework, its pricing, its accompaniment by lecturers and music, its variations (the moving panorama), etc., all offer potential insights into the construction of popular visual culture in the years leading up to cinema. To take but one example of this intermedial resonance, consider the images upon which the panoramic experience was constructed. Generally speaking, topics fell into two categories: nature and event. 'Nature' included landscapes such as Niagara Falls and the Alps, as well as the urban landscape (from Paris to St. Petersburg). 'Event' (especially by the last half of the nineteenth century) offered dramatized renderings drawn from the historical past or political present such as the *Siege of Paris*, *The Charge at Balaclava*, and *Jerusalem on the Day of the Crucifixion*. Although increasingly sensational as the 19th century progressed, panoramic images were often inscribed within the period's tendency to record, catalogue, and teach, a point noted by John Ruskin among others. Panoramas – whether painted, photographed, or filmed – all tended to focus on the same images.

Film was quick to embrace the panorama. Pathé's 1900 catalogue, covering the period 1896–1900, includes '*vues panoramiques*' as one of its nine production categories. Within a year, Pathé's catalogue fine-tuned its categories, maintaining nine categories but distinguishing between '*scènes panoramiques et de plein air*' and '*vues panoramiques circulaires*', described as utilizing optics especially developed to capture the grandeur of the 1900 Exposition Universelle (Bousquet and Redi 1988, 63).[16] Like their painted predecessor, filmed panoramas tended to construct views of nature (especially cityscapes) and events (particularly natural disasters). But the historical moments so dramatically depicted in some painted panoramas remained outside film's grasp. Like painted panoramas, many films were dominated by the horizon, offering various degrees of lateral movement ranging from several degrees to 360 degrees.

Given the dominance of the horizon and the similarity of image content, the use of the term 'panorama' to describe a film category would have offered viewers an apt description of the experience that awaited them. True, the visual experience was more like the so-called 'moving panorama' in which a long image unrolled within a framed space (like the Mareorama) than like the 360-degree panorama, but it passed easily within the conceptual framework of the term and the cultural practice of the day.[17] Angela Miller has discussed this conjuncture in some detail, so I will not repeat it here (Miller 1996). More interesting, however, are the many films that were marketed as panoramas, but which bore little resemblance either to circular or moving panoramas. How did they fit within such a deeply embedded set of cultural expectations? First, a few examples of the films.

In 1904, American Mutascope and Biograph released a series of 'panoramic' studies of St. Joseph Missouri. *Panorama of Third Street*, *Panorama of Fourth Street* and *Panorama of Field Street* suggest the beginnings of a systematic urban mapping project, but as far as I can tell, the series did not go much further. These three films share several characteristics. All of them are taken from the tops of moving vehicles, and in each case we see the human or horse drawing the wagon, giving the image a fixed set of referents despite its movement through space. This compositional strategy recalls the architectural framing strategies in Barker's original patent, and effectively reinforces the illusion of screen depth. In each case, the wagon upon which the camera is mounted is subject to the vagaries of urban traffic – halting at intersections, veering out of the way of other traffic, and so on, giving a tangible sense of the flow of the city. And in each case, the camera explores deep

space in a linear manner, moving directly towards the vanishing point. *Panorama of Fourth Street* contains several slight camera movements left and right; but, like its partners, its main direction is straight ahead.

While one might argue the case that these films should be included within the same conceptual realm as traditional panoramas, the films also seem to serve as explorations of the space mapped out by another late nineteenth-century rage – the stereograph. The illusory third dimension evoked in the stereograph, and responsible for its status as one of the most important elements of pre-cinematic visual culture, is here entered and probed. Three-dimensional illusionism is here replaced by four-dimensional illusionism, with the fluid process of movement through space displacing the stereograph's visual limits. These films occupy a cross-point between the two very different experiences of spatial continuity mapped out by the panorama and the stereograph, and given form in the litany of devices from Hale's Tours onwards that exploit our perceptual tendencies. And they point the way towards the strategies for evoking a sense of immersion that would be developed by videogames, flight simulators, and certain virtual reality applications.

Back to the films. American Mutascope and Biograph's 1905 *Panorama From the Times Building, New York*, uses a camera tilt to establish that the camera is indeed mounted on the top of the Times Building, before changing direction and offering a more typical lateral panoramic view. Other films, however, rely exclusively upon vertical tilts: Edison's 1901 *Panoramic View of the Electric Tower From a Balloon* offers a sense of spatial liberation not by actually being filmed from a balloon (at least as far as I can tell), but instead by using a vertical tilt. *Panorama of the Eiffel Tower* (Edison 1901) and *Panorama of the Flatiron Building* (AM&B, 1903) tilt up and down their respective objects, both replicating a familiar way of seeing such tall structures, and assuring the viewer by the continuity of the imagery that the buildings are indeed as tall as they seem.

More traditional in its composition, Edison's 1900 *Panorama of the Paris Exposition from the Seine* consists of three boat-mounted shots that follow the course of the river, filming its banks and passing under several bridges. Although the shooting strategy remains roughly the same, there are apparently breaks between the shots as evidenced by the spatial ellipses. This fragmentation obviously disrupts the seamless illusion so carefully crafted in painted panoramas, and usually adhered to in most filmed versions. Panoramas – horizontal or vertical or forward tracking – usually maintained time and space relations in a rigorously continuous manner. Where fragmentation exists (it seems to occur more frequently in lateral tracks), it seems additive rather than analytic, as if the camera is turned on and off when passing points of interest appear in the frame, but nevertheless suggesting a rather important conceptual difference between the continuities of penetration (the power of which was attested to by Hale's Tours) and horizontal and vertical camera swivels, where the issue of fixity and continuity of the viewing position was central. The assumptions of continuity of time/space relations were sufficiently strong that Edison's 1901 *Pan American Exposition by Night* (a traditional or lateral panorama) exploited them for its special effect. Within about two minutes, an initial panoramic shot of the exposition by daylight transforms into an artificially illuminated night scene thanks to stop-motion photography.

The use of seamless expanses of time and space in forward tracking shots, tilts and lateral panoramas seems to speak to the spirit, although not the letter, of the traditional panorama. The emphasis on presence, on the unfolding of space in a manner that encourages the viewer to feel 'really on the very spot', links these films

with Barker's initial appeal. The question is whether that is sufficient to recoup the problematic nature of the filmed panorama's graphic form, which can often be completely at odds with 200 years of painted panoramic practice. Obviously the fragmented lateral tracking films, composed as they are of several shots and evident ellipses, have a more complex relationship to the traditional panorama, particularly in its photographic variant where the image was of necessity pieced together of discrete spatio-temporal elements, rather than being synthesized with the aid of the brush. Although the illusion of continuity may well have reigned, the implications of discontinuity for photographic panorama practice remain unresolved.[18] Another discrepancy in the cinematic embodiment of panoramas might have been introduced by forward tracking shots. Here, one of the fundamental characteristics of the painted panorama (360-degree or moving) regards the image's fixed distance from the spectator. The forward track, moving towards the vanishing point, shifts the extensive relations mapped out by the traditional panorama to a set of intensive relations – an ever closer inspection of spaces first seen at a distance.

One additional variation that the cinematic panorama introduced emerged from the issue of motion in two senses. First, especially vehicle-mounted panoramas offered traces of the texture of movement (here, I do not mean the scanning movement of the camera itself). The ambient rocking of boats, the bumping, halting, and pacing of wagons on rough city streets, the ebb and flow of traffic and its translation into the fabric of the shot we see, all served to modify the view presented. This might be seen as a form of embodiment, as previously suggested with the Trans-Siberian Railway Panorama and the Mareorama; in this case, the camera serves as a 'physicalized' entity through which we gain access to particular spaces. Embodiment of the shot would have situated the panorama within a world far less serene and contemplative than that portrayed in the painted panoramas, and even subtle movements may have been capable of subverting the visual control of the viewer, of breaking the spell. A second related factor has to do with camera movements as a response to the movement before the camera. In a film such as Edison's *Champs de Mars* (1900), for example, the camera follows particular characters as they walk along, motivating the panning movement on the basis of human interest rather than reflecting the physical embodiment just mentioned. Here the notion of subjectivity, of the view dominated by an agency with particular interests that may or may not be shared with the viewer, comes forward, again, challenging the contemplation and distance so characteristic of the traditional panorama.

To conclude, the seemingly obvious fit between the long tradition of painted panoramas and one of the most populous of early film categories has some complications. These offer insights into the cultural construction of film as a new medium with new representational capacities – and at the same time call attention to certain overlooked dimensions of generic identity. What generic claims did filmmakers make for their panoramas? It would seem that they went back to the basics, addressing the process of seeing rather than strictly adhering to the elongated horizontal graphic surface that was quickly becoming synonymous with the concept of panorama in the period. The best case, then, for generic adherence has to do with a fundamental perceptual approach, one, moreover, with distinct ideological implications. Such a view incorporates vertical tilts, forward tracking shots, and many of the graphic variations that might seem to weaken the connection between the painted and filmed panorama.

On the other hand, such factors as the embodiment of movement, as the camera reflecting the impact of the physical world, together with the 'subjectification' of the view as it responds to points of interest, break in fundamental ways with the visual regime of the traditional panorama. The viewer's mastery of a visual domain is subverted by the marks of a mediator. The fragmentation of coverage associated with lateral tracking shots also offers a particular challenge to incorporating certain filmed panoramas within the conceptual framework of the traditional panorama. Although these films seem to adhere rather closely to the idea of a horizon-dominated composition, their rupturing of the time–space continuum so central to the painted panorama would seem to subvert their relation to the ideas behind the panorama. Finally, that hybrid of the panorama and the stereograph, the forward tracking shot, offers some of the most interesting challenges. The shift from an extensive to an intensive mode of seeing, and the shift from three- to four-dimensional illusionism, set these films apart. They fulfil the requisites of Barker's claims for the panorama, having centrally to do with a way of seeing, 'a particular viewpoint', resulting in the sensation of being there. Yet contemplative perceptual modes and any sense of visual control are subverted in the process. To this day, forward-mounted tracking shots remain one of the few film forms heavily embellished with the sorts of framing devices that Barker's 1787 patent specified. While we no longer use the term 'panorama' to describe these films, as previously mentioned, they continue to require the special housing familiar to the traditional panorama (Hale's Tours; Disneyland; the Trocadero; racing car videogame consoles).

The *Panorama of Fourth Street in St. Joseph Missouri* is positioned about halfway on the timeline between Barker's panorama and today's flight simulators. Like other panoramas of the film medium's first decade, it looked backward for its generic identity and place within visual culture. But if the panorama was the most populous film entry by title in the US copyright records in the century's first decade, it disappeared almost without a trace by the second, when fictional narratives completely dominated the copyright record, reflecting the larger changes in film distribution, exhibition, and audience. But while absent as a highly visible sector of the film industry, its strategies have remained very much present in such developments as Cinerama, many IMAX films, point-of view racing video games, the driving channel,[19] and some theme park rides.

Conclusion

The concepts mapped out by Barker in his patent for the panorama and even some of his strategies for achieving them remain very much alive – if complicated and transformed by other technologies and expository modes – in the present. As one set of approaches for evoking a sense of presence, of immersion in a virtual world, Barker's notions of seamlessness, framing and masking strategies, and motion, found themselves redeployed not only in other media settings, but more importantly, in other relationships to space and time. From the mobile spectator to the mobilized image, from the frozen moment to the exploration of duration, from the distant vista to the penetration of space, a series of significant shifts map the distinctions between Barker's panorama and those related endeavors that we have briefly considered.

Of course much has happened since the apparent waning of the panoramic film in the medium's second decade. The dominance of narrative in mainstream film relegated the panoramic to a supporting effect, whether expositional or sensational.

Cinema technologies such as Cinerama, Cinemascope, 3-D and IMAX often peppered their narratives with more visual sensation than their academy-format counterparts, and the occasional *This is Cinerama* (Cooper and Von Fritsch 1952) tipped the balance back in the other direction, restoring pride of place to the sensational. But mainstream cinema by and large achieved a state of equilibrium, whereas the introduction of new media allowed for the return of the repressed, as games, digital photography, and virtual reality applications all explored terrain familiar from the panorama.

We might be inclined to look at the long haul of development, from Barker's painted circular canvases and framing devices to QuickTime, and argue (mistakenly, I think) for a teleological notion of technological progress and with it strategies to provoke immersion. Were William Pyne's cries of terror upon encountering the Eidophusikon in the late eighteenth century any less heartfelt than those that accompanied the many subsequent experiences of immersion that new generations of media technology afforded? The very metric of the affective and experiential, of representational veracity and its perception as presence, is historically, culturally and indeed subjectively contingent, allowing only retrospective reappraisals that say little about historically lived encounters. Or one might in turn read these same developments as demonstrating ever more compelling technologies of control and subject positioning, as have critics such as Michel Foucault, Norbert Klein and Jonathan Crary. This, as far as I am concerned more astute, reading works precisely because it draws upon a social and historically accrued perspective. Ever greater levels of embodiment (from visual spectacles such as cinema to physically interactive engagements such as video games); ever greater public participation levels; and, consistent with that, ever more pervasive integration of the spectacle industry into the larger political economy of society, all suggest a general directionality and thus legibility.

Although the term 'panorama' has morphed from the robust claims put forward by Robert Barker well over 200 years ago to the elongated-format option available on even the simplest of digital cameras, the goals and strategies bound up in the original meaning of the term have remained a vital – and, in the case of early cinema, even a defining – part of our media experience as we continue to explore an immersive relationship to the represented world.

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Notes

1. *Around the world in 360°* (Panorama Mesdag website), http://www.panoramamesdag.nl/index.php?page=/ex-iqtvra_en.php.
2. Barker initially called his device *La Nature à Coup d'Oeil* [Nature at a glance], a term that might indeed suggest the strategy deployed by contemporary digital panoramas which enable all 360 degrees to be seen from one position. But the details of his patent make clear that this was not his intent, and his decision to rename the device 'panorama' shortly after filing suggests the more appropriate sense.
3. Painted by Hendrik Willem Mesdag, a prominent member of the Dutch 'Haagse School', the scene portrays the beach at Scheveningen a short distance away. Over 360 feet long and 42 feet high, the Mesdag Panorama remains a popular tourist attraction.

4. The International Quick Time Virtual Reality Association (www.iqtvra.org) has about 300 panoramic photographer members throughout the world. Their stated interest is creating interactive panoramas and object movies for the computer. Their exhibit at the Mesdag panorama was held from July to September 2003.
5. 'Specification of the patent granted to Mr. RoBERT BARKER,' *The Repertory of Arts and Manufactures: Consisting of Original Communications, Specifications of Patent Inventions, and Selections of Useful Practical Papers From the Transactions of the Philosophical Societies of All Nations, &c. &c*., Vol IV (London: Printer for the Proprietors, 1796), 165–7.
6. The etymology of *panorama* is the source of some confusion, and I define the term here as 'complete view' by relying on the ancient Greek *pan* (all, complete) plus the noun *horama* (spectacle); see also Aristotle, *de Anima*, 428 a. 16: [to] *oram-a-atos*, 'that which is seen', visible object; and Aristotle *Ethica Nicomachea,* 1173 b. 18: sight, spectacle; and *Xenophon Cyrenaica*, 3.3.66: vision during sleep, dream. One can also find a related verb form that can be translated as 'to see', and scholars such as Angela Miller have opted for this latter approach, translating panorama as 'all-seeing' (Miller 1996, 35). This seems to me to create confusion between the neologism panorama and the ancient word *panoptes* (Zeus is 'panoptes' or all-seeing [from the verb; '*opsomai*']). To translate both *panorama* and *panopticon* as 'all-seeing' elides a crucial distinction between the two; see Liddell & Scott, *Greek–English Lexicon*, new ed., with revised supplement by Jones et al. (Oxford 1925, 1940; Supplement: E.A. Barber et al., Oxford 1968).
7. Thanks to Frank Kessler for pointing out the debate in *Cinémathèque* between Philippe Dubois and Michel Frizot regarding the transformation of panoramic practice and the shift from painted to photographic to filmed panoramas. This debate further attests to the slow morphing of practice and terminology in the last decades of the nineteenth century (see. Dubois 1993; Frizot 1994).
8. This mapping strategy can be traced back at least to fourth-century maps of the Roman road network, as exemplified by the fourth-century *Tabula Peutingeriana* (which maps a road running from Spain to India, mixing elements of landscape with lines representing the roads; the format is 682 cm long and 34 cm wide).
9. Robert Barker, *Edinburgh Evening Courant*, 29 December 1787, cited in B. Wilcox, 'Unlimiting the bounds of painting' (Hyde 1988, 21). The material on Barker in this section derives from Wilcox's article; see also Kunst-und Ausstellungshalle der BRD (1993).
10. Foucault mentions this link (1979/1975, 317 n. 4).
11. *Sensation and Sensibility: Viewing Gainsborough's 'Cottage Door'*. Huntington Art Gallery, Yale University, http://www.huntington.org/ArtDiv/CottageDoor2006/CottageDoor2006.html.
12. Gunning's notion has been subject to considerable development over the years.
13. Unfortunately, the Cinéorama was reportedly closed after three days because of safety concerns due to the extreme heat build-up in the projection space below the gondola's floor. MacGowan (1965); The Panoramas of the Paris Exposition (1900).
14. Wikipedia, *Trans-Siberian Railway Panorama* (accessed 10 June 2006); see also Comment 1999, 74. According to Alice Guy-Blaché, a film was also made as part of the exhibit, but today there remains no evidence of its existence.
15. Finally fully completed in 1903, the *Railway* was shown at the 1904 Louisiana Purchase Exposition in St. Louis, Missouri. George Hale, from neighbouring Kansas City, Missouri, exhibited his far less elaborate train-mounted, cinema-based entertainment (Hale's Tours of the World) at the same exhibition. Pyasetsky's panoramic painting still exists; in 2004, the Hermitage Museum announced plans to restore, document, and exhibit it across a variety of platforms (http://www.hermitage.museum.ru/html_En/11/2004/hm11_1_141.html).
16. I wish to thank Frank Kessler for bringing this to my attention.
17. Frequently described as having disappeared by the turn of the century, several moving panoramas have survived into the present. Carnegie Institute's Museum of Natural History (Pittsburgh, PA, USA), for example, displayed one through the 1960s that portrayed prehistoric flora and fauna.

18. See for example, the debate between P. Dubois and M. Frizot (Dubois 1993; Frizot 1994).
19. Some regional Dutch television stations include a program that essentially constitutes a 'phantom car ride'. The camera shoots through the front window of a car as it winds its way through back streets and country roads, providing a seamless penetration of familiar spaces.

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