



Seeing through the Haverstraw Tunnel

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Abstract

The American Mutoscope Company's *The Haverstraw Tunnel* was one of the most popular screenings of 1897, inspiring ecstatic rhetoric in descriptions of the experience of watching the original "phantom ride" train film. Historians appropriated such language ("an unseen energy swallows up space") to theorize about early cinema. Yet until 2020, this significant production was difficult to see. The one-minute recording was shot and projected on large-format 68mm film stock, producing a high-resolution image as seen from the front of an express train traveling along the Hudson River. This essay recounts the archival research process abetted by the Library of Congress and British Film Institute National Archive. In 2020 the library provided digital access to its 16mm film print, created in 1955 from a paper print. This research then culminated with the British archive providing access to its 2018 restoration of *Haverstraw Tunnel*, an 8K scan of an original 68mm print.

In reviewing a new Hollywood movie in 1920, critic Epes W. Sargent asserted his historical perspective as a veteran of the trade. "This writer has been viewing film since the Lumiere babies, the Haverstraw Tunnel and the Empire State Express were the screen stars."¹ Only now do I fully appreciate this statement and what it meant in 1920. A hundred years later, I began researching *The Haverstraw Tunnel* (American Mutoscope Co., 1897), only to find that it was not easily seen in any form. Using the blog of the New York University Orphan Film Symposium, I published an account of my first research foray. This led quickly to receiving access to a low-resolution version created at the Library of Congress (LOC), which I shared in a second post. A concluding third installment included access to a higher-resolution file derived from the British Film Institute (BFI) National Archive's 8K restoration of original 68mm film prints.²

What follows are significantly updated versions of those three web publications, written in a blog mode I began using in 2017 for the Media Ecology Project (MEP) and its idea of creating a compendium on early cinema. Rather than an essay with a singular argument, the posts narrate how the research unfolded. They also contribute some discoveries in dialog with the historiography of early cinema, emphasizing how digital access not only enhances research but also brings researchers into productive collaboration with archives and libraries.

Part 1: 68mm 8K Phantoms (February 29, 2020)

What to make of Sargent's remark that the Haverstraw Tunnel and Empire State Express train were early "screen stars"? I knew the film titles but couldn't readily see them, and certainly not in their large-format glory.

In 1896 the American Mutoscope Company used its new Biograph camera and proprietary 68mm film to make three Empire State Express pictures advertising New York Central Railroad's speedy passenger train. I did not see the footage in full until early 2020. And I had not seen *The Haverstraw Tunnel* at all. Where could one see this, the original "phantom ride" train film, about which much had been written? It was absent from the web and video releases but had not disappeared altogether. The International Federation of Film Archives (FIAP) Treasures from the Film Archives database lists four archives holding a copy: LOC, BFI, the Academy Film Archive, and Eye Filmmuseum in the Netherlands.

In 2004 Nico de Klerk of the Filmmuseum included *Empire State Express* in his Orphan Film Symposium program "Where to Place the Camera? 24 Biograph Films, 1896–1901."³ But I was outside the theater tending to technical issues during those thirty seconds. I did, however, see the thrilling final piece: another large-format phantom train ride, *Across Brooklyn Bridge* (1899). Its dynamic three minutes inspired audience member Bill Morrison to make his structuralist diptych *Outerborough* in 2005. Commissioned by the Museum of Modern Art (MoMA), it uses as its sole source the 68mm film restored by BFI and Cineric labs in New York.⁴

I saw *Empire State Express* in early 2020 when Mark Williams shared a recording of a Paul Spehr presentation at Dartmouth College. Then Mike Mashon shared the digitized LOC paper print copy. The visual quality of the paper-to-16mm version is, of course, shockingly distinct from the Eye and BFI scans of their 68mm prints. Since this was a title Spehr was fond of lecturing about, I hastily made a video diptych comparing them for my NYU class on silent cinema.

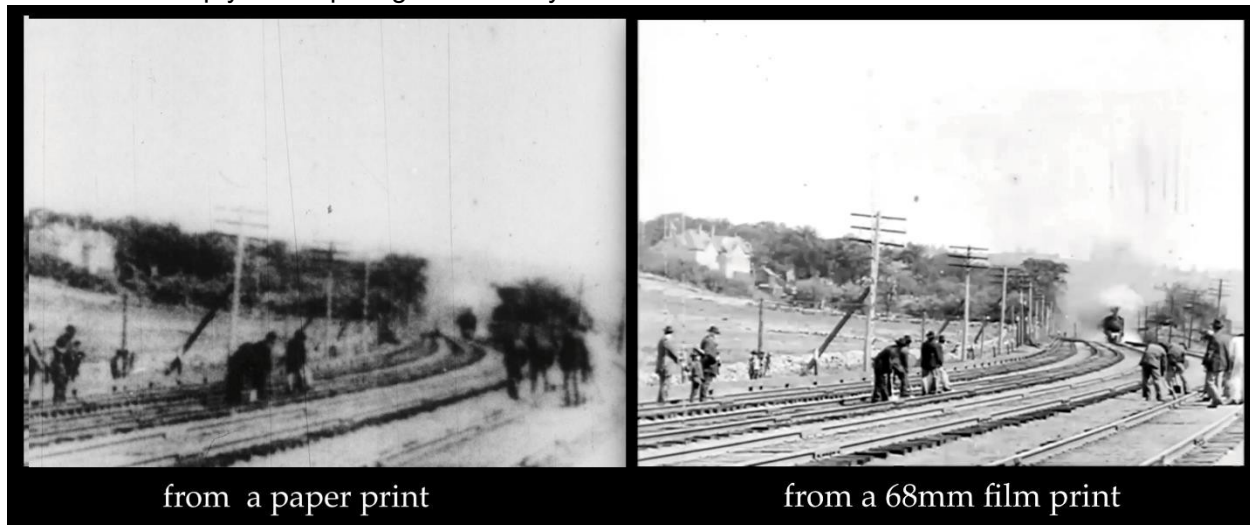


Figure 1. *Empire State Express* (American Mutoscope Co., 1896). Frames from LOC version (left) and Eye Filmmuseum (right).

I was surprised to see this very thing on-screen at LOC's memorial for Spehr on January 31, 2020.

G. W. Bitzer and W. K. L. Dickson of the American Mutoscope Company filmed the Empire State Express train in September 1896 in Palatine, New York. At least five takes were recorded on 68mm film stock. This footage matches keyframes from *Empire State Express* (no. 3), published in the 1902 *Biograph Photo Catalog*, AMB no. 81, US copyright title *Empire State Express, N.Y. Central R.R.* (December 18, 1896). Left: LOC digitized copy of its 16mm print (twenty-eight feet), created by rephotographing one of two 35mm paper print rolls that AMB deposited for copyright July 25, 1902. Right: Eye Filmmuseum, digitized copy of its 68mm film distribution print. Initially preserved in 35mm, the wide-gauge print was later scanned at 8K. Compressed video taken from a presentation

by Paul Spehr at Dartmouth College for MEP.

Given *The Haverstraw Tunnel*'s significance for early cinema, it's notable that few people have seen it. Because Biograph deposited a paper print with the US Copyright Office in 1903, LOC has that 35mm paper roll (two copies, actually) and a 16mm film copy that Kemp Niver made for LOC and the Academy of Motion Picture Arts and Sciences, though not until 1955. Both the BFI National Archive and Eye Filmmuseum hold unique 68mm prints, restored in both 35mm and high-resolution digital files.

But an archived film is not a single strand of celluloid on a reel. BFI's collections database lists fragments it holds, intermixing *Haverstraw Tunnel* with two other railway films. [The record lists no fewer than eighty-two elements](#). Bryony Dixon, BFI curator of silent film, emailed "to explain the database entry."

There are 11 separate 68mm rolls called *Haverstraw Tunnel* of varying lengths. (They are labelled 70mm). These have been duplicated, so there are 11 dupes on 35mm and 11 prints on 35mm—and of course digital elements—but only 11 original pieces, many of which are repeated footage. These came from Dr. Schultze at Kodak Museum in England. I restored about 60 large format films in 2018, mainly Biograph titles including one print of *Haverstraw Tunnel*.⁵

The Kodak Museum at Harrow in Greater London opened in 1927. Upon its closing in 1985, Schultze's widow donated the collection to what is now called the National Science and Media Museum in Bradford. (Its Kodak Gallery has a permanent history of photography.) Rolf S. Schultze (1902–1967) was curator of the museum in the 1950s and 1960s.⁶ Was the film ever shown there? The Academy Film Archive also lists *Haverstraw Tunnel* in its holdings, dated 1903. This is a duplicate of the LOC paper print, made in the year Biograph ceased 68mm production and began making 35mm reduction prints of its 68mm holdings—nearly 2,500 titles shot over eight years. In theory it might have been the Lubin Company's *Panoramic View of Haverstraw Tunnel, N.Y.* (1903), but the academy catalog states it does not have this title. Lubin titles were sometimes unauthorized dupes of someone else's film. American Mutoscope and Biograph (AMB) proprietary 68mm prints would not have been easy to obtain before 1903. But as soon as Biograph started selling 35mm prints, Lubin began duplicating and releasing them under different titles. Others did likewise, as courts ruled this did not violate copyright.⁷ Lubin's Haverstraw film also predated Biograph's *From Haverstraw to Newburg*[h] (1903), which received renewed attention a century later under the title *Down the Hudson*.

"Apart from the nonpareil feature-length Veriscope production *The Corbett-Fitzsimmons Fight*, *The Haverstraw Tunnel* may have been the most popular motion picture of 1897."

Assuming Lubin shot a new Haverstraw panorama in 1903, that lost film can still be appreciated through the characteristic chutzpah of the Lubin description, which concludes: "You stand amazed at the ingenuity of the master mind who invented the apparatus [Siegmond Lubin!] for reproducing nature so true and lifelike. A film like

this one is a whole show in itself, and anyone exhibiting it must be prepared to repeat it again and again."⁸

Apart from the nonpareil feature-length Veriscope production *The Corbett-Fitzsimmons Fight*, *The Haverstraw Tunnel* may have been the most popular motion picture of 1897. Press accounts are numerous and full of praise. American Mutoscope's large Biograph camera was

mounted on the front of a West Shore Railroad express train traveling along the Hudson River as it approached the town of Haverstraw, New York. The film is a single unedited take. It was the original “phantom ride” and called such in headlines. At the Palace Theatre in London, the Biograph program listed *The Phantom Ride—Haverstraw Tunnel*.⁹

But who shot the remarkable film? Paul Spehr notes that the name of the skilled camera operator remains unknown. The company’s leading producers, W. K. L. Dickson, G. W. Bitzer, and Wallace McCutcheon Sr. were elsewhere when it was recorded in September or October 1897.¹⁰

The company’s unpublished production logs—now available as a database in the MEP Early Cinema Compendium—were transcribed and annotated over many years by Spehr with Eileen Bowser. There are 3,445 entries from 1895 to mid-1908, numbered in roughly chronological order. The records give the working title as *Haverstraw Tunnel and Landscape* (AMB no. 301) with print lengths of 343 and 59 feet. Many of the entries list two lengths, the meanings of which the log does not explain. The shorter films run fifty feet or less. The footage counts refer to 35mm copies, rather than the much longer 68mm originals.

The AMB exhibition practices offer an explanation. Films were shown both in theaters on 68mm Biograph projectors and in arcades on small hand-cranked Mutoscope peep show machines. Regardless of the length of theatrical celluloid prints, short editions were needed to fit the limits of Mutoscope cabinets.

The 68mm negative was used to print frames onto four- by six-inch paper cards. These were mounted on circular drums, typically holding eight hundred to a thousand cards. A film footage calculator reveals that *The Haverstraw Tunnel*’s fifty-nine-foot version would yield the right number of frames (944) and flip cards for a Mutoscope.¹¹ The long version might have been the length of some projection prints or the total amount of film shot before cutting.

The Haverstraw production inspired enthusiastic commentary when shown in theaters. Reports from 1897–98 inspired now essential discourse on early cinema, particularly the oft quoted phrase “an unseen energy swallows up space.”

Many newspaper reports on Biograph screenings document this as the standout title among the many in circulation and the most sensational since *Empire State Express* a year prior. A quick search of Newspapers.com hit upon dozens of such items, from cities large and small. This account from London is indicative.

A remarkable film was added to the Biograph series of photographs at the Palace Theater last night. The pictures were photographed from the front of a locomotive of a West Shore Express, traveling at the rate of sixty miles an hour. Objects flash pass; the scene is ever changing. The dark entrance to the Haverstraw Tunnel looms in the distance, and gradually widens until the train plunges into utter darkness. For an instant the screen is black, but a small white speck gradually opens out, and with a rush the tunnel is left behind. The new pictures are, perhaps, the most successful ever exhibited in this country.¹²

"The Haverstraw production inspired enthusiastic commentary when shown in theaters. Reports from 1897–98 inspired now essential discourse on early cinema, particularly the oft quoted phrase 'an unseen energy swallows up space.'"



Figure 2. Ad for Poli's Wonderland Theatre, *Morning Journal-Courier* (New Haven), December 27, 1897.

American Mutoscope and S. Z. Poli's Wonderland had been cross-promoting for more than a year. In November 1896, Dickson and Bitzer shot *An Arrest at New Haven, Conn.*, no. 93, a comic stunt staged outside the theater.¹³

The Biograph catalog failed to capture the brilliance of the Haverstraw recording: "A remarkably interesting view taken from the front end of a locomotive on one of the most picturesque bits of track along the Hudson. The train passes through the tunnel, and the view of the gradually increasing opening, as the train emerges from the opposite side, is particularly novel."¹⁴

The Haverstraw Tunnel is one of the 68mm Mutoscope and Biograph films preserved by Eye Filmmuseum in tandem with the BFI National Archive. Restored versions were included in the 2017 Cinema Ritrovato. The Netherlands Filmmuseum screened it in 35mm at the 2000 Giornate del Cinema Muto, part of "The Wonders of the Biograph" program. De Klerk repeated the program at the University of Chicago in 2001 with Tom Gunning.

At the 2014 NYU Orphan Film Symposium at Eye in Amsterdam, Spehr introduced a program of restorations that included a British Mutoscope picture Dickson made in response to the success of *The Haverstraw Tunnel*. Here is a hand-colored version of that "sequel," *Conway Castle—Panoramic View of Conway on the L. & N.W. Railway* (1898).

An anonymous scribe writing in *The Phonoscope* saw a Biograph program on the big screen at Keith's Theater in New York in September 1897. Reading these evocative words, one can imagine the sensations *The Haverstraw Tunnel* induced.

The train was invisible, and yet the landscape [sweeps by] remorselessly, and far away the bright day became a spot of darkness. That was the mouth of the tunnel, and toward it the spectator was hurled as if a fate was behind him. The spot of blackness closed around and the spectator being flung through that cavern with the demoniac energy behind him. The shadows, the rush of the invisible force and the

This vaudeville house in New Haven, Connecticut, advertised it as a headliner, receiving local press coverage throughout Christmas week. "The great American Biograph continues to be the topic of everyone's wonder, and the Haverstraw tunnel scene is scoring the biggest hit ever made by the machine."



Figure 3. Each photographic frame in the original booklet measures 35mm wide. Detail from Museum of Modern Art object number F1938.1.73, page from *Biograph Photo Catalog* (1902). Biograph Collection, MoMA Department of Film Special Collections, New York.

uncertainty of the issues made one instinctively hold his breath as when on the edge of a crisis that might become a catastrophe. . . . The audience that stood five deep back of the orchestra chairs half reeled as it caught itself. It had been snatched up and rapt away by a phantom train.¹⁵

These Biograph films of 1896–1903, when taken from the original large-format celluloid sources, still have the power to thrill. MoMA has restored and showcased thirty-six titles. In 2019 it created an attractive video for its YouTube channel, *The IMAX of the 1890s: How to See the First Movies*, using high-quality excerpts.¹⁶ Eye and BFI have preserved more than two hundred others shot in England, Wales, Germany, France, the United States, and the Netherlands. Historian Barry Anthony says there were more than five thousand productions in all, though his filmography lists only the couple hundred from the Amsterdam and London collections.¹⁷ Whatever the number, the more of these that receive wider exposure, the more our conception of early cinema will be enhanced.

There is no better evidence of this than the excited reception that greeted MoMA's 2020 YouTube post of *The Flying Train* (1902), one of the last phantom rides produced in 68mm: nearly a million views as of 2023 and hundreds of "Wow!" comments. Seeing the 2019 premiere of the restoration at the museum, I reacted the same way. Many in the audience verbally expressed their pleasure in being "rapt away by a phantom train" in flight. The screening ended to applause.

The Biograph Picture Catalogue says of entry no. 10191: "Vohwinkel, Germany—97 feet. Panoramic view taken from the Suspension Railway at Barmen and Elberfeld, Germany. A marvelous example of engineering work." Produced by Deutsche Mutoskop-und-Biograph GmbH, its history is difficult to trace.¹⁸ Fortunately, there is a German Early Cinema Database (in English!), which documents that the two-minute film was sometimes exhibited under the title *Fahrt auf der ersten deutschen Schwebebahn zwischen Vohwinkel und Elberfeld* (Ride on the First German Suspension Railway between Vohwinkel and Elberfeld). The MoMA preservation print (made with a modified original Biograph printer) is in pristine condition.¹⁹ With the camera suspended under the elevated rail, it glides smoothly and speedily through the cityscape beneath it.

Watch! See and feel how an unseen energy swallows up space.

We must note that a YouTuber's colorized and enhanced copy of MoMA's *Flying Train* appeared online almost simultaneously, garnering more than two and a half million views by 2023. A similarly embellished treatment of the Haverstraw footage followed.²⁰

"The way in which the unseen energy swallows up space and flings itself into the distances is as mysterious and impressive as an allegory. . . . One holds his breath instinctively as he is swept along in the rush of the phantom cars."

The arresting phrase "an unseen energy swallows up space" has a significant trajectory. Coined by an unidentified writer after seeing *The Haverstraw Tunnel*, it moved through time steadily after the 1983 publication of Gunning's frequently cited essay "An Unseen Energy Swallows Space: The Space in Early Film and Its Relation to American Avant-Garde Film."

Referring to the later Hale's Tours of the World, which projected train ride films to viewers seated inside a mock-up railway car, he writes, "The experience to be reconstituted in these films is the thrill of motion and its transformation of space."²¹ He then quotes from the 1897 *New York Mail and Express* description of the Haverstraw film.

The way in which the unseen energy swallows up space and flings itself into the distances is as mysterious and impressive as an allegory. A sensation is produced akin to that which Poe in his "Fall of the House of Usher" relates was communicated to him by his doomed companion when he

sketched the shaft in the heart of the earth, with an unearthly radiance thrilling through it. One holds his breath instinctively as he is swept along in the rush of the phantom cars. His attention is held almost with the vise of a fate.

Gunning cites his source as Robert C. Allen's dissertation "Vaudeville and the Film, 1895–1915."²² The *New York Mail and Express* piece was reprinted earlier in Niver's *Biograph Bulletins* (1971), which contains facsimiles of AMB's original promotional material.

Bulletin no. 2 compiled press clippings about exhibitions throughout 1897, with a special section titled "English Press Comments on the View of the Haverstraw Tunnel on the West Shore Railroad." Some three dozen items in US and British papers mention *The Haverstraw Tunnel*. The one referring to an unseen energy swallowing up space is the longest, a complete article.²³

The phrasing and tone of the *Phonoscope* piece resemble the passage from the *Mail and Express*. Gunning speculated about this in 2015: "The similarities between the two descriptions are striking and either indicate a broadly common mode of experiencing this film, or less excitingly, a single author. I suspect the former, but cannot rule out the latter."²⁴ Looking now at dozens of 1897–98 descriptions of the Haverstraw film, we can see both things may be true. Idiosyncratic words and phrases recur, including in British sources. Appropriating previously published material was common trade practice, and the American Mutoscope Company itself supplied copy from which some writers cribbed, as found in other clippings from *Biograph Bulletin* no. 2.

Reports in the British periodicals *The Pelican* (October 30) and *The Sketch* (November 10) use paragraphs almost verbatim from *Phonoscope*. Elsewhere, the conspicuous term "swallow up" reappears in other 1897 reports about *Haverstraw Tunnel*. On October 30, *Travel Life* (UK) wrote "the black mouth of a tunnel appears to meet you, and gets bigger and blacker as you hurtle until it swallows you up in dark embrace." In the November *Boston Truth*: "Two black holes in the mountain side seem to swallow up the tracks in their inky depths." Even the titles of the two longest pieces are similar: "Life Reproduced on Canvas" in the *Mail and Express* subtitle and "Life on Canvas" in *The Phonoscope*.

Part 2: Haverstraw on Paper (March 5, 2020)

One day after I posted "68mm 8K Phantoms" and noted the lack of digital access to *The Haverstraw Tunnel*, Mike Mashon, LOC Moving Image Section head, responded by sending a ProRes MOV file. On March 5, 2020, I posted it to the Internet Archive and published a second blog post noting the web debut of this version of the 1897 motion picture copyrighted in 1903 as *Haverstraw Tunnel*. LOC scanned its silent, black-and-white, 16mm film at twenty-four frames per second.



Figure 4. Screen capture of the digitized 16mm film created from the LOC 35mm paper print.

The speed looks about right, although the original films were shot and projected at thirty or more frames per second. Of course, being so far removed from the original large-format film, this copy must pale next to the high-resolution scans of the 68mm prints made by the BFI National Archive and Eye Filmmuseum.

To be specific about the provenance of this file, it's from LOC's noted Paper Print collection, a.k.a. the Paper Print Film collection, of more than three thousand items. As of 2022, catalog.loc.gov lists 755 titles. *Haverstraw Tunnel* is not among them (yet). The MOV file (1440 x 1080 pixels) is derived from a 2K scan (2020) of the library's 16mm print created in 1955, which was made from one of the two 35mm paper rolls AMB deposited for copyright in 1903, using the 35mm film copy made from the original 68mm film print of *The Haverstraw Tunnel*—made from a 68mm negative exposed in 1897.

Kemp Niver also authored the essential reference book *Early Motion Pictures: The Paper Print Collection in the Library of Congress* (1985). Its entry for *Haverstraw Tunnel* gives the copyright registration number and date but is uncertain about the year of creation.

AM&B © H30724, Apr. 24, 1903,
Location: Haverstraw, N.Y. Date: 1897[?]
27 ft. FLA3394 (print) FRA0692 (neg.)

An earlier edition of the book provided only the later year of copyright.

Anyone who studied the film in the past would have gone to LOC—or the academy’s archive or library—and watched a 16mm print on a flatbed viewer. Its twenty-seven feet of celluloid—a little more than a thousand frames, including the two title cards—runs less than a minute. Niver’s prosaic description, of course, cannot capture the spirit of what the original spectators said they saw in 1897.

The camera was positioned on the front of a train traveling along one of the two tracks in an unpopulated section of country. As the train progresses, the film encompasses the surroundings on each side of the tracks, such as trees, telephone poles, cattle breaks, farmhouses, etc. The train tracks enter a tunnel. The film continues, showing the entry and the exit through the tunnel, and ends as the train is once again on a long, straight track.²⁵

One curious detail in the paper print is the conspicuously curved left side of the frame, which runs throughout the recording but is not in the 1955 title cards.

Judging by the perforations visible in the edge-to-edge scan, the curved area includes some photographic image falling outside of the frame line. Since it’s from the images printed on paper, the 35mm negative (from which the paper copies were made) might have had this imperfection. Perhaps it’s a lab artifact of making a 35mm motion picture film copy of the 68mm original in 1903. Or perhaps the curve was introduced when printing onto the contact paper? Little is known about how the films got to paper, although there must have been a standard procedure since this was done thousands of times between 1896 and 1915.

March 16: BFI confirmed it can sell a digital access copy (MP4) of its restored Haverstraw film for £50. I arranged the purchase, but the effects of the COVID-19 pandemic may interrupt this for a long time to come. (Five months, as it turned out.)

July 27: The Haverstraw posting in March was my last before turning fully to the Orphan Film Symposium of May 2020. But this day’s harvest of research included a notable mention of the 1897 Mutoscope film’s afterlife. ProQuest unveiled the database Entertainment Industry Magazine Archive. The site describes three collections:

Archive 1: Music, Radio, and the Stage. 1.1 million pages from periodicals including *Billboard* (1894–2000) and *The Stage* (1880–2000).

Archive 2: Film and Television. 1.1 million pages from *Variety* (1905–2000), *Boxoffice* (1920–2000), *Broadcast* (1960–2000), and others.

Archive 3: Film and Television (Part 2). One million pages from *The Hollywood Reporter* (1930–2015), *American Cinematographer* (1920–2015), *Kine Weekly* (1907–1971), and others.

Much of this material overlaps with the content in the Media History Digital Library and its Lantern search engine. But there’s new territory to search as well. Even where the two databases overlap, searches return different results. A search for “Haverstraw” yielded a document that adds significant facts not only about the 1897 film but about the commercial operation called Hale’s Tours of the World that followed it.

The franchise featured scenic films projected to audiences seated inside a train car replica. But what 35mm films did George C. Hale and his franchisees use circa 1904 to 1911? André Habib has shown that the Miles Bros. famous film *A Trip Down Market Street* (1906) was made for sales to Hale’s Tour exhibitors—until the San Francisco earthquake made it exploitable as a topical film a few days after it was recorded.²⁶

This full-page advertisement (Figure 5) appeared in *Billboard* on March 17, 1906. Kleine

Optical Company offers extraordinary detail about how Hale's Tour units operated and what film titles they offered. Kleine identifies Edison and AMB as suppliers, alongside Pathé and other European companies. The ad is surprisingly frank about the condition of the films. It includes *Haverstraw Tunnel*, which in 1906 was a 35mm reduction. Perhaps the condition described is related to the great popularity of the film in 1897.

HAYERSTRAW TUNNEL—Length 200 feet. Price \$24.

The negative from which this film is made is old and defective.

“Old and defective”! Honest ad copy. The two hundred feet of 35mm film would give it approximately three times as many frames as the LOC prints, confirmation that the version seen above is not only a pale version of the original but a truncated one. However, in June 1906, a Biograph Bulletin listed at the top of its recommended Hale's titles *Through the Haverstraw Tunnel*—but at fifty-four feet.²⁷

MOVING PICTURE MACHINES AND FILMS

FOR HALE TOURS

We will offer in the course of a few weeks the Edison Exhibition Model Kinetoscope modified by ourselves, in combination with a moving picture lens to project a picture 11x8½ feet in size at a distance of 24 between lens and curtain. This enlarged picture at a short distance is made necessary because the view is seen by the audience from the opposite side of the curtain, and because the locations of these Hale Tour Cars never furnish a long distance between instrument and curtain for the projection of a large picture.

Price of the Edison Exhibition Model Kinetoscope without take-up, and without stereopticon attachment, with Kleine device for near work and extra short distance lens, \$115.

We now have received quantity stock of the following foreign films for the Pullman car work, and will be able to make immediate deliveries. The films are all of Pathe make, and under our contract with the Pathe Cinematograph Company we have the exclusive control of these subjects. The quality of the Pathe films is so well known that no comments are necessary.

Roll No. 1 includes: **A**—“Engadin in Switzerland.” This film was taken from the front of a moving train and shows a trip up the Swiss mountains between Chamonix and the Mont Blanc. The railway runs to the top of the Engadin. This is the region of perpetual snow, and the traveler wends his way through numerous tunnels and over many chasms. This film can be delivered tinted for a moonlight effect or without tint for a day effect. The moonlight effect darkens the film somewhat, but adds to its beauty. **B**—“A Trip Across the Alps.” This view was taken from the rear of a train and presents delightful mountain scenery. **C**—“Thibidado.” Another mountain scene taken from the front of a moving train, the character of the scenery being somewhat different from the two preceding, and furnishes variety. Shadowy mountains are seen in the distance, and at the finish of the roll the train approaches a village nestling in the

BY RAIL THROUGH THE CANADIAN ROCKIES—Length 303 feet. Price \$36.36.

This is a fairly good film, which is taken from the front of a train, but shows a great many railway curves, with the engine and forward coaches in sight.

RUNNING THROUGH GALITZEN TUNNEL—Length 140 feet. Price \$16.80.

The negative from which this film is made has been in existence some six years, and is no longer in first-class condition; the film will answer, however, in case of shortage of other good subjects.

UP BROADWAY AND ACROSS THE BROOKLYN BRIDGE—Length 350 feet. Price \$42.

This film is of comparatively recent origin, but the negative is somewhat worn; the great interest which the audiences take in this subject, however, makes it a very desirable film.

PANORAMIC VIEW OF ALBERT CANON—Length 175 ft. Price \$21.

A good panoramic railroad film in Canada, view going forward.

HAYERSTRAW TUNNEL—Length 200 feet. Price \$24.

The negative from which this film is made is old and defective.

THROUGH THE DELAWARE WATER GAP—Length 127 feet. Price \$18.75.

This is made from a new negative and the camera follows the car in front, showing the rear platform, upon which stands a young lady. The panoramic view shown at both sides of the track as the train passes on, is photographically beautiful.

Figure 5. Detail from the Kleine Optical Co ad. *Billboard*, March 17, 1906.

Nota bene

The 2020 Orphan Film Symposium/Eye Academic Conference was to feature new 68mm Mutoscope and Biograph restorations presented by Frank Roumen and Giovanna Fossati (Eye), Katie Trainor (MoMA), and Simon Lund (Cineric). We were also to debut Cineric's scan of a unique object from the Library of Congress, a 68mm paper print for an obscure film called *Deyo* (1897). Alas, COVID-19. Rather than cancel the event, which was to have been in Amsterdam, New York University hosted the event online with *Ambulante*, a documentary organization from Mexico, but

without the Biograph show. Despite the lockdown in Amsterdam, Eye projected images from the restorations on the museum's exterior and throughout the empty interiors. An artful, melancholic short video, *De Filmschatten van Eye* (April 2020), documented the historical moment.²⁸

Part 3: Haverstraw Restored (August 17, 2020)

Thanks to BFI curator Bryony Dixon, my third post about the wonderful little big-format film of 1897 got the happy ending expected of third acts. Post one: the fabled first phantom ride film was hard to find. Post two: LOC shares its scan of the "paper film," now available for download. With archives greatly limited by pandemic conditions throughout 2020, it was surprising and rather heroic that rare films got shared in this way. Post three culminated with the web premiere of the restored 68mm version.

Here's the MP4 access file from BFI Archive Sales. The surviving pieces of 68mm were in rough shape, so what we see 123 years later is not as spectacular as it might be, especially without benefit of 4K projection. But even reduced to a low bitrate of 1.5 Mbps, the image resolution is striking.

The original American Mutoscope Company film might have been lengthier than what survives here. But the key moments of the train entering and exiting the tunnel remain intact. There's also a kind of punchline in the final moment, one not mentioned in any reports I have read. As the train emerges from the tunnel, the tracks curve left, suddenly revealing a human figure for the first time. A railwayman facing the oncoming train calmly steps off the rail and strolls to the empty parallel track, exiting screen left. Choreographed or not, the moment brings more than a hint of danger. A final shock or thrill for the excited audiences.

One imperfection could be misleading. Upon entering the tunnel, the image does not turn completely dark. For five seconds we see small, grayish rectangles, which disappear when the light from the tunnel exit begins to appear. These are remnants of the mechanical imperfection visible in some 68mm Biograph films, defects peculiar to the camera's feed mechanism. In Eye's video about the making of its film *The Brilliant Biograph* (2020), restorationist Annike Kross shows the characteristic "white stains," explaining these were caused by rubber bands that secured the film running in the camera. In earlier work with the collection, Mark van den Tempel surmised projectors caused such "clouds."²⁹

"There's also a kind of punchline in the final moment, one not mentioned in any reports I have read. As the train emerges from the tunnel, the tracks curve left, suddenly revealing a human figure for the first time."

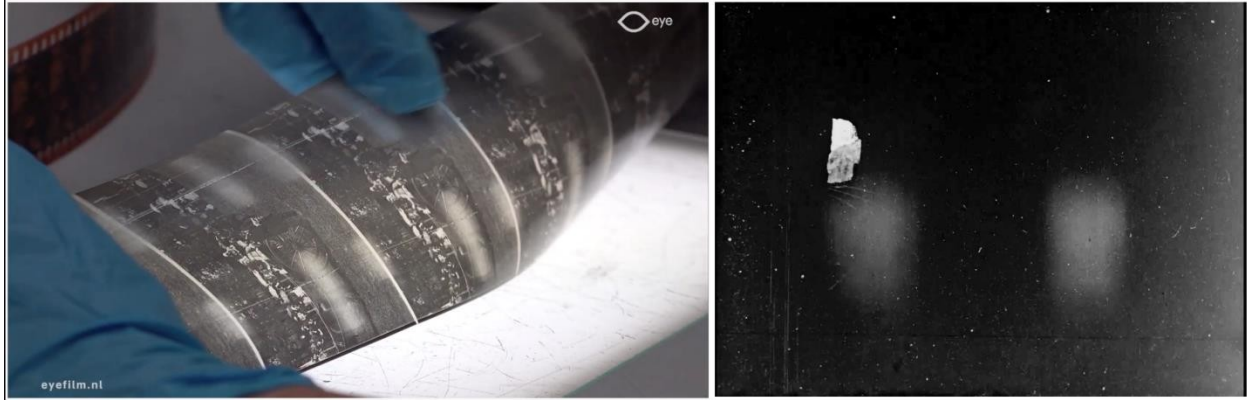


Figure 6. The twin imperfections visible in some 68mm prints. Left: A frame from *The Making of “The Brilliant Biograph.”* Annike Kross holds a 68mm print over a light table. Right: A frame from the BFI copy of *Haverstraw Tunnel*.

Reports of American Biograph theatrical screenings did not mention this defect in *The Haverstraw Tunnel*. They only marvel at the clarity of the image. A *Los Angeles Times* report, for example, is effusive, noting no imperfections. The eighth of ten items on the American Biograph program at the Orpheum Theater, the phantom ride stood out, even alongside novel reverse-motion and hand-colored films.

Probably the greatest of all these is the picture of the Haverstraw Tunnel, taken from the front of a train as it approaches, enters, and exits the tunnel. This scene is said to be beyond all question the most vivid and sensational ever produced by any moving-picture machine. It is said to be practically a realization of a ride upon a cow-catcher of an engine on the West Shore express through the Haverstraw Tunnel.³⁰

Here is a rudimentary desktop video comparison. I slowed the LOC file but didn't quite get the two synchronized. The BFI file runs exactly one minute; the LOC file thirty-nine seconds (transferred at twenty-four frames per second). At twenty-seven feet in length, this 16mm print transferred at eighteen frames per second also runs exactly one minute. The paper print contains a few last frames not seen in the British copy.

The higher resolution of the file derived from BFI's 68mm materials is obvious. Superior detail, better contrast, sharper focus. The paper print also crops edges of the image on all sides, which is especially noticeable at the top. The final frames make the comparison most dramatic, as the Hudson Highland mountain—High Tor—that dominates the view upon exiting the tunnel is nearly invisible against the dull gray sky seen in the paper print (top).



Figure 7. Top: A frame from the digitized LOC paper print, sprockets from the 16mm print included. Bottom: A similar frame from the BFI scan of one of its 68mm prints.

The Hudson River and Haverstraw Bay are off-screen to the right and in the distant background. The train was tracking from south to north, the tunnel being south of the town. Haverstraw is about thirty-five miles north of Manhattan, on the west side of the Hudson River. Notably, the river is at its widest—nearly three and a half miles—at Haverstraw Bay. Before the railroad, the scenic bay was a subject for the Hudson River School of artists.

Other views

After studying this motion picture of a train trip through the tunnel, I examined other images

of Haverstraw made in the late nineteenth and early twentieth centuries. The Mutoscope scene was followed by other images in popular culture that might have derived from the movie.

In 1898 the West Shore Railroad Company placed five commissioned paintings or prints in sites around New York, including one titled *The Entrance to the Haverstraw Tunnel*. Another in the series, *Haverstraw Bay and Environs*, “looks from a point just without Haverstraw tunnel” over the Hudson, said one description, to “the purple mantled mountains” in the distance.³¹ This 1905 purpled railway postcard may well be a reproduction of that painting. Its composition certainly mirrors details seen in the motion picture.

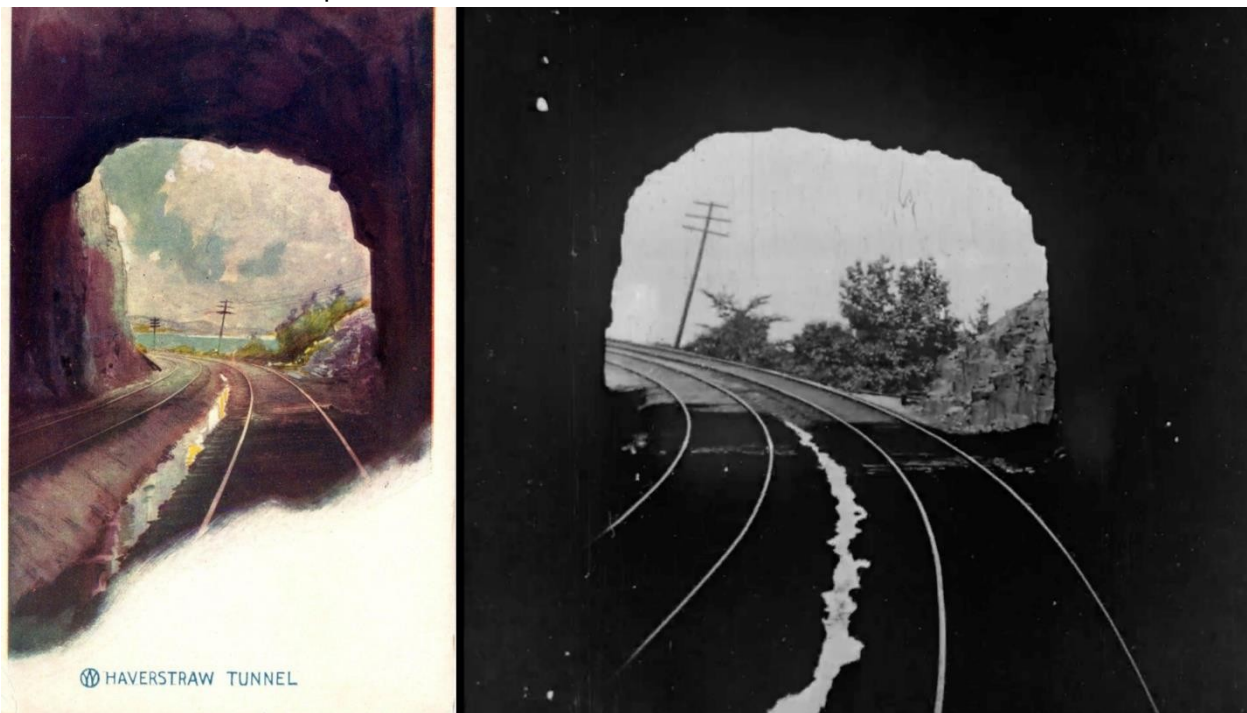


Figure 8. Left: Postcard published by New York, Ontario, and Western Railway, 1905. Right: A frame from the 1897 film.

The similarity might not be coincidental. Biograph commonly circulated still images from its films, including via Mutoscope cards, whose dimensions resembled those of standard postcards.

Another publication appeared at the time, *Summer Homes and Tours on the Line of the Picturesque West-Shore Railroad*, a guidebook issued annually from 1895 to 1900. The 1896 edition waxed poetic about the view from the train upon exiting the tunnel, a perspective the film repeated. Following a poem by Oliver Wendell Holmes, “The Hudson” (1854), the book’s touristic narrative offered this description:

Suddenly we plunge into a tunnel and in a moment emerge, into the sunlight and our eyes rest on one of the most magnificent scenes the imagination can conceive. The quiet landscapes and low levels through which we have passed are changed for lofty mountains on the one side and the broad-sweeping waters of the Hudson River on the other. The track is clinging to the side of the High [Tor] Mountain and a hundred feet below flows the majestic Hudson, widening out into what is known as Haverstraw bay. Our first exclamation was, “Oliver Wendell Holmes is right.” The Rhine, the Rhone, the Avon, are not to be compared with this.³²

The 1898 edition featured a new cover, “a view down the Hudson from the north portal of the Haverstraw tunnel.”³³ The color lithograph is a reverse shot of the film’s final frames, showing a passenger train rounding the riverside bend, the bay at left.

Even if these depictions of that landmark were not literally responding to the famous American Mutoscope film, the ecstatic responses to seeing High Tor and the Hudson from the perspective of the train emerging from the darkness of Haverstraw Tunnel rhyme with the thrilled reactions reported among Biograph spectators.

To conclude with a final “other view” of the site, we should return to *From Haverstraw to Newburg[h]*, the Biograph film made six years later and circulated as *Down the Hudson*. Although there’s no documentation of its original reception, it has left a trace among those interested in early cinema’s relation to later avant-garde aesthetics. Gunning included it in his 1988 San Francisco Art Institute screening, “Biograph Night at the Nickelodeon.” His program notes refer to it as a blend of actuality and trick film, with undercranking that makes “sections of this Hudson voyage zip past the viewer at a magical speed.”³⁴ The camera’s varying speeds unfurl a thirty-mile trip in less than three minutes. The uncanny effect proved apt for the DVD set *Unseen Cinema: Early American Avant-Garde Film, 1894–1941* (Anthology Film Archives, 2005). Experimental filmmaker Peter Hutton includes *Down the Hudson* in full at the beginning of *Time and Tide* (2000), his meditative, soundless, 16mm documentary shot on the river.

"This case study of the search for *The Haverstraw Tunnel* is but one reminder that the twenty-first century has become a new golden age for the study of early cinema."

However, I suggest the film has a knowing relationship to its 1897 predecessor. AMB copied it to 35mm and copyrighted *Haverstraw Tunnel* in April 1903. Biograph production logs document that camera operators A. E. Weed and F. S. Armitage filmed *Down the Hudson* on September 25. They shot from a boat in Haverstraw Bay, traveling up the Hudson River to Newburgh, New York, recording the western shore on 35mm film. The

opening frames show the town of Haverstraw, albeit in extreme long shot. The image resolution of the paper print is rather poor, so details are not discernible. Yet the framing indicates the camera was pointed to the area where the Haverstraw Tunnel emptied northbound trains onto tracks alongside the river. Surely Biograph filmmakers knew what *The Haverstraw Tunnel* had meant to the company’s early success.

Conclusion

This case study of the search for *The Haverstraw Tunnel* is but one reminder that the twenty-first century has become a new golden age for the study of early cinema. Broad digital access to primary sources and increasingly large datasets of historical material are joined with access to the moving images themselves.

We can see more of these rare works, including ones even informed historians didn’t know existed. And we can contextualize them amid more details about the world they were part of. Often those concrete details challenge us with their contradictions. We know and can confirm that discourse about *The Haverstraw Tunnel* was and is predominantly about the sensation it caused, the thrill audiences found in watching it. Seeing the film at last—so modest in scale, photographed with camera defects, disappointing when compared to the rediscovered *Flying Train*—we might wonder how to reconcile our reaction with the documented discourse.

Yet the new ability to gather lots of detailed information quickly, searching millions of pages

of historical newspapers, leads us to pieces of contradictory evidence. More complex modes of reception are documented. What to make, for example, of this notice about Philadelphia viewers? They were seeing a Biograph program in a big-city vaudeville house when *The Haverstraw Tunnel* sensation was new. Yet the *Philadelphia Inquirer* remarked, “There will be several new views shown in the biograph and the panoramic view of Haverstraw tunnel will continue to arouse laughter and comment.”³⁵

Laughter?

A list of external links in this essay can be found here.³⁶

About the Author

Dan Streible is an associate professor in the Martin Scorsese Department of Cinema Studies at New York University, where he is also an associate director of its Moving Image Archiving and Preservation master’s program. He teaches courses on film historiography, silent cinema, nonfiction media, and curating moving images. He is author of the book *Fight Pictures: A History of Boxing and Early Cinema* (2008). His research focuses on “orphan films,” neglected works outside of the commercial mainstream. Since 1999, he has organized the biennial Orphan Film Symposium, an international gathering of scholars, archivists, and artists devoted to the study, preservation, and use of archival moving images. He serves on the US Library of Congress’s National Film Preservation Board. In 2012 the Academy of Motion Picture Arts and Sciences named him an Academy Scholar.

¹ Epes W. Sargent, “So Long Letty,” *Moving Picture World*, October 16, 1920, 929.

² The three original essays are Dan Streible, “68mm 8K Phantoms,” February 29, 2020; “Haverstraw on Paper,” March 5, 2020; and “Haverstraw Restored,” August 17, 2020; Orphan Film Symposium blog, wp.nyu.edu/orphanfilm/?s=haverstraw.

³ “On Location: Place and Region in Forgotten Films,” Fourth Orphan Film Symposium, University of South Carolina, Columbia, March 2, 2004, www.sc.edu/filmsymposium/archive/orphans2004/program.html.

⁴ Bill Morrison, *Outerborough* (Hypnotic Pictures, 2005), 9 min., vimeo.com/41096007.

⁵ Bryony Dixon, email, March 17, 2020. The BFI Collections database is searchable at collections-search.bfi.org.uk/web.

⁶ M. D. Gauntlett, “Obituary: Dr. Rolf Schultze,” *Photographic Journal* 107, no. 12 (1967): 417. The Kodak Gallery is on the museum’s website, www.scienceandmediamuseum.org.uk/whats-on/kodak-gallery. See also Bryony Dixon, “Wide-Gauge Films from the Mutoscope & Biograph Company 1897–1902,” program note, Cinema Ritrovato Festival, Bologna, 2019.

⁷ See Heidi Holstrom, “Pioneers of Movie Piracy and the Expansion of Copyright Law,” The Unwritten Record, National Archives blog, February 12, 2020, unwritten-record.blogs.archives.gov/2020/02/12/.

⁸ *Complete Catalogue of Lubin Films* (January 1903), quoted in the AFI Catalog entry for this film title.

⁹ Luke McKernan, “The American Biograph at the Palace,” *Griffithiana* 66–70 (1999/2000): 248–58.

¹⁰ Paul Spehr, *The Man Who Made Movies: W. K. L. Dickson* (John Libbey, 2008), 472–73.

¹¹ These tools are invaluable for deriving running times based on physical length, width, and frame rates (and vice versa). Scenesavers (an archival media service) offers its film footage calculator, www.scenesavers.com/content/show/film-footage-calculator, and Kodak has its film calculator, kodak.com/en/motion/page/film-calculator.

¹² “New Pictures at the Palace,” *Pall Mall Gazette*, London, October 26, 1897.

¹³ Paul C. Spehr, “The Scope of Those Scopes: Production Diversity for the Mutoscope and Biograph During the Movies’ Early Years,” in *Beyond the Screen: Institutions, Networks, and Publics of Early Cinema*, Marta Braun, et al. eds. (Indiana University Press, 2016), 215.

¹⁴ *Biograph Picture Catalogue* (1902), 120. The AFI Catalog adds to this quotation: “The most delightful bit on the West Shore Railroad. First view of the Hudson on the northbound trip.” This text, however, is from a 1906 summary of *Through the Haverstraw Tunnel* prepared for the Hale’s Tour franchise, reprinted in Biograph Bulletin no. 73 (June 30, 1906). See Kemp R. Niver, *Biograph Bulletins, 1896–1908*, Bebe Bergsten, ed. (Locare Research Group, 1971), 250.

¹⁵ “Life on Canvas: A Phantom Ride on an Express Train and Other Remarkable Views Made by the Biograph,” *Phonoscope*, August–September 1897, 6.

¹⁶ Sean Yetter, director, *The IMAX of the 1890s: How to See the First Movies*, Museum of Modern Art, May 27, 2019, 11 min., www.youtube.com/watch?v=BBNwiPgknn8.

¹⁷ Barry Anthony, “The Biograph Collections in Amsterdam and London,” *Griffithiana* 66–70 (1999/2000): 259–75. See Paul C. Spehr and Jean-Jacques Meusy, “The Beginnings of the American Mutoscope and Biograph Co. in France,” *Griffithiana* 62–63 (1998): 128–69. They discuss how the company judged which American films would play well in Europe: “Some views, such as *The Haverstraw Tunnel*, aroused a strong impression on every spectator and prefigured, fifty years in advance, the sensational scenes of *This Is Cinerama!*”

¹⁸ Martin Loiperdinger says *The Flying Train* was widely distributed in Germany using this English title. Uli Jung and Martin Loiperdinger, eds., *Geschichte des dokumentarischen Films in Deutschland*, vol. 1 (Stuttgart: Reclam, 2005), 324.

¹⁹ D. Karl Malkames, “Centennial of the Biograph Motion Picture System,” *SMPTE Journal* (December 1999): 857–58. The German Early Cinema Database is a project of the Data Center for the Humanities, University of Cologne (2018–present), earlycinema.dch.phil-fak.uni-koeln.de.

²⁰ Denis Shiryayev, *[60 fps] The Flying Train, Germany, 1902*, August 8, 2020, 4 min., www.youtube.com/watch?v=EQs5VxNPhzk. AI expert Shiryayev’s annotations detail his alterations: resolution upscaled to 4K, frames per second boosted to sixty, playback speed slowed by half, music and color added. Other YouTubers made further embellishments: cropping the image to fit the contemporary 16:9 aspect ratio, adding sound effects, and (inadvertently) reversing the horizontal axis. See Vincinator [Vincent Nguyen], *The Haverstraw Tunnel, 1897 Train Ride: AI Enhanced Film*, March 9, 2021, 2 min., www.youtube.com/watch?v=ZAWYekTFuYs.

²¹ Tom Gunning, “An Unseen Energy Swallows Space: The Space in Early Film and Its Relation to American Avant-Garde Film,” in *Film before Griffith*, John L. Fell, ed. (University of California Press, 1983), 363. In the same book, Robert C. Allen’s “Contra the Chaser Theory” quotes the same passage (110–11). Gunning also discusses the phrase in “The Whole Town’s Gawking: Early Cinema and the Visual Experience of Modernity,” *Yale Journal of Criticism* 7, no. 2 (1994): 189–201.

²² Robert C. Allen, “Vaudeville and the Film, 1895–1915: A Study in Media Interaction” (PhD diss., University of Iowa, 1977), 131.

²³ “Where the Past Speaks: What the Biograph Is Doing for the Future Historian—Life Reproduced on Canvas,” *New York Mail and Express*, September 25, 1897.

²⁴ Tom Gunning, “The Attraction of Motion: Modern Representation and the Image of Movement,” in *Film 1900: Technology, Perception, Culture*, Annemone Ligensa and Klaus Kreimeier, eds. (Indiana University Press, 2015), 164–73, here citing Niver as the source for the *Mail and Express* passage.

²⁵ Both editions use the same description. Kemp R. Niver, *Motion Pictures from the Library of Congress Paper Print Collection, 1894–1912*, Bebe Bergsten, ed. (University of California Press, 1967), 290; Niver, *Early Motion Pictures: The Paper Print Collection in the Library of Congress* (Library of Congress, 1985), 132. The earlier book organized the films by idiosyncratic subject categories, with *Haverstraw Tunnel* positioned awkwardly under “Newsreels: Human Interest.”

²⁶ André Habib, “Le cinéma de réemploi considéré comme une ‘archive.’ L’exemple de *A Trip Down Market Street* (1906) et *Eureka* (1974),” in *L’avenir de la mémoire: Patrimoine, restauration et réemploi cinématographiques*, André Habib and Michel Maire, eds. (Presses universitaires du Septentrion, 2013), 147–58.

²⁷ Niver, *Biograph Bulletins*, 250.

²⁸ Annabel Essink, director, *De Filmschatten van Eye*, Eye Filmmuseum, April 21, 2020, 1 min., www.youtube.com/watch?v=Col74js19ec. See the program and videos for Water, Climate, and Migration, Twelfth Orphan Film Symposium, May 26–29, 2020, wp.nyu.edu/orphanfilm/2020/06/28.

²⁹ Eye Filmmuseum, *The Making of “The Brilliant Biograph: Earliest Moving Images of Europe” (1897–1902)*, August 24, 2020, 8 min., www.youtube.com/watch?v=S0s9-YrYs0E. The compilation *The Brilliant Biograph* (Frank Roumen, 2020), 50 min., streams at player.eyefilm.nl/en/films/the-brilliant-biograph. Mark van den Tempel, “Making Them Move Again: Preserving Mutoscope and Biograph,” *Griffithiana* 66–70 (2000): 231–33.

³⁰ “At the Theaters,” *Los Angeles Times*, December 5, 1897.

³¹ “Scenery along the Hudson,” *Omaha Daily Bee*, October 6, 1898.

³² West Shore Railroad Company, *Summer Homes and Tours on the Line of the Picturesque West-Shore Railroad* (Fulton Publishing, 1896), 23, archive.org/details/summerhomestours00est/page/22/mode/2up.

³³ “West Shore ‘Homes and Tours,’” *Brooklyn Standard Union*, June 15, 1898. Color lithograph cover of the 1898 edition of *Summer Homes and Tours*, archive.org/details/1898-homes-tours-cover.

³⁴ Tom Gunning, “Biograph Night at the Nickelodeon,” San Francisco Cinematheque Program Notes, October 16, 1988, 1–2.

³⁵ “Keith’s Bijou—Vaudeville,” *Philadelphia Inquirer*, October 10, 1897.

³⁶ Links Featured in “Seeing through the Haverstraw Tunnel”

Video 1. *Empire State Express (1896): Comparing Paper Print to 68mm* (Streible, 2020):

<https://archive.org/details/empire-state-express-1896>

Record of *Haverstraw Tunnel* from the British Film Institute: <https://collections-search.bfi.org.uk/web/Details/ChoiceFilmWorks/150397242>

Video 2. *Conway Castle—Panoramic View of Conway on the L. & N.W. Railway* (British Biograph, 1898) [restored by Eye Filmmuseum]: <https://www.youtube.com/watch?v=re8VWjVbeC0>

Video 3. *The Flying Train* (1902): <http://www.youtube.com/watch?v=2Ud1aZFE0fU>

Video 4. *Haverstraw Tunnel* (Mutoscope, 1897) [LoC paper print]: <https://archive.org/details/haverstrawtunnel>

Video 5. *The Haverstraw Tunnel* [BFI 68mm print digitized]: https://archive.org/details/haverstraw_tunnel

Video 6. *The Haverstraw Tunnel (1897): Comparing Paper Print to 68mm* (Streible, 2020):

<https://archive.org/details/haverstraw-tunnel-comparison>

Video 7. *Down the Hudson* (Biograph, 1903): <https://archive.org/details/down-the-hudson-1903>

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