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“Pagan Constellations in the Sky”: (Re)Animating
Muybridge in the Film History Classroom

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“Pagan Constellations in the Sky”

*(Re)Animating Muybridge in
the Film History Classroom*

COLIN WILLIAMSON

makes me imagine what is out of frame
not the studio in Philadelphia—instead
it’s a darkly
painted farmhouse predicting the Black
Maria
and ol’ Muybridge grabs a chair and sits,
pushing his thighs down
as if his limbs forgot how to bend on their
own
while everything creaks:
knees elbows shoulders wrists
the chair under his weight,
even his sigh comes out with a rasp
as he cranks himself up.

—MOLLIE MURTAGH, “DESCENT”

Writing about Eadweard Muybridge’s late-nineteenth-century experiments with chronophotography, Rebecca Solnit remarks, “If Muybridge was at the root, the zero point, the dawn of moving pictures, then he is everywhere as the ghost at the end of those trails of photographs rushing by, beamed across the world as television, dreamed across the world as the shared content of contemporary life, present not only as specific images but as several media.”¹ Solnit is not being hyperbolic; Muybridge is indeed everywhere.² His photographic studies of bodies in motion have intersected with everything from popular culture and debates about the origins of the cinema to questions in histories of art and science; critical studies of race, gender, and disability; the avant-garde and digital media art; and philosophies of time and movement. Perhaps the pervasiveness stems from the scope of his work; his photographic output was prolific and monumental. Or perhaps it is the stubborn resistance of Muybridge’s motion studies to being easily categorized—are they art or science? do they belong to the history of film, photography, or painting?—that allows them to resonate with

so many aspects of modern visual culture and the popular imagination.

For someone so clearly obsessed with time, it is quite fitting that Muybridge is now caught up endlessly in it. Specifically, in relation to the cinema, his instantaneous photographs of moving bodies—stilled, serialized, and transformed into what Hollis Frampton called “pagan constellations in the sky”—move through film history with the same repetitive circularity that the photographed bodies exhibit as they move across their recognizable grids.³ Put simply, Muybridge is an uncanny figure. As Tom Gunning observes, “the image of Eadweard Muybridge haunts us, beckoning to us from the space between things, the interstices and gaps that appear, unexpectedly, within actions and between instants.”⁴ For many, simply mentioning Muybridge or his galloping horses calls to mind an array of commonplaces, associations, and myths that together form a picture (however focused or fuzzy) of early film history.

The haunting ubiquity of Muybridge’s work is central to something that I consistently encounter in teaching early film history to undergraduate students. Along with Étienne-Jules Marey, Muybridge usually frames students’ introduction to the proto-cinema and early cinema periods. He is also fairly well established in the popular knowledge that students bring to my classes. If they do not know him by name, they are quick to recognize his photographs of horses in motion and have a general sense that his cameras played important roles in shaping the technological landscape in which the cinema emerged. Students also sometimes hold Muybridge up as one of the “fathers” and “inventors” of motion pictures and readily identify his images as “primitive” emblems of the cinema’s “infancy.” These perceptions reflect a teleological narrative about the emergence of the cinema that students no doubt inherit from popular culture. Especially at the introductory level, the narrative can conjure an image of that period as a mausoleum filled with the “dead” or inanimate remains of old media that subsequent innovations rendered obsolete, both as cultural artifacts and as objects of study. The challenge, as I see it, is in helping students overcome this perception so that they can

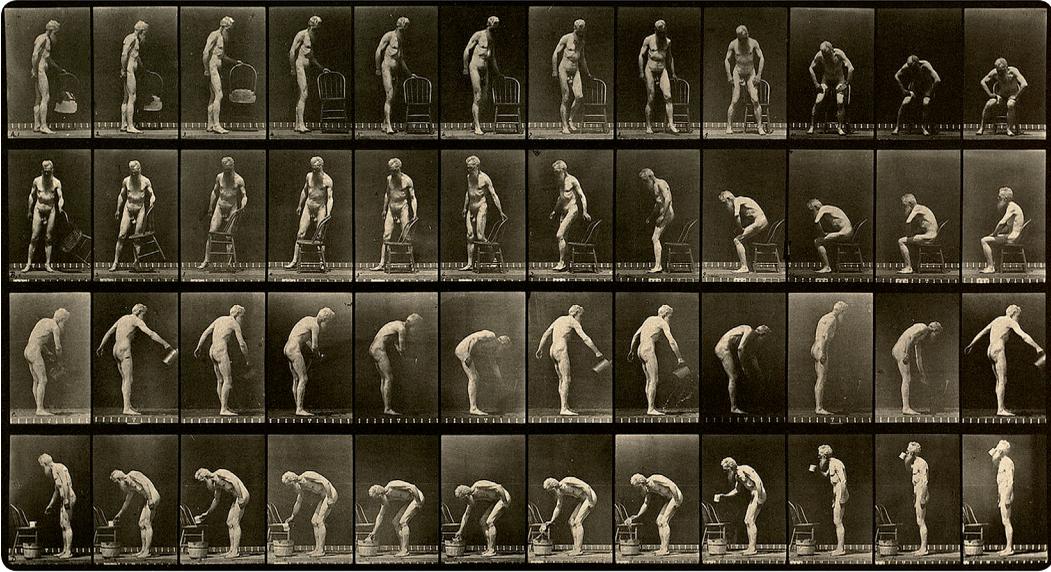


Figure 1. Plate 490. *Movements, Male, A, sitting down; B, sitting down; C, sprinkling water; D, stooping for cup and drinking.* From Eadweard Muybridge, *Animal Locomotion: An Electro-photographic Investigation of Consecutive Phases of Animal Movements, 1872–1885*, 11 vols., 781 plates (Philadelphia, 1887).

“imaginatively recreate the [cinema’s] past as a present lived moment,” to borrow Mary Ann Doane’s words.⁵

While thinking through how to address this challenge with students, I recently found myself circling a comment made by Thomas Elsaesser. Reflecting in 2004 on archaeological approaches to early cinema studies, he called “for a *hermeneutics* of astonishment, where besides curiosity and skepticism, wonder and sheer disbelief also serve as the impulses behind historical research, concerning the past as well as the present.”⁶ The comment has roots in the large-scale return to the archive that marked the seminal 1978 International Federation of Film Archives (FIAP) symposium in Brighton, where historians and archivists rediscovered early cinema as a strange and wonderful thing that did not fit the familiar story of a simple origin and a primitive beginning. That story and its corresponding themes of linearity, invention, and paternity were (and continue to be) challenged by fine-grained accounts of multiple beginnings, parallel histories, and the cinema’s location in a vast and changing constellation of technologies and practices spanning centuries. Elsaesser’s suggestion is not simply that scholars should wonder at this constellation but that they should embrace the wondrousness of the once-new medium as a method in their research and writing.

Although Elsaesser’s invocation of astonishment is aimed at the academic researcher, it got me thinking: What might a “hermeneutics of astonishment” look like in the undergraduate film history classroom? And how might the experience of learning about film history benefit from renewing or reanimating the aesthetic experiences—for example, astonishment, wonder, curiosity—of the once-new media that students encounter? With these questions in mind, I designed a semester-long experimental research seminar that involved students in creating web-based dossiers using archival materials related to Muybridge’s chronophotography and the time he spent producing *Animal Locomotion* (1887) at the University of Pennsylvania. The “experiment” was in bringing together two dimensions of Muybridge’s archive: its long-standing impor-

tance to research on the origins of the cinema and its prominent use and interpretation by artists, including Frampton. The project asked students to assume the roles of researchers, collectors, and artists while using “new” digital media to literally and figuratively reanimate Muybridge’s “old” photographs and related archival materials. The wager was that balancing historical research and creative practice in this way could create meaningful opportunities for students to bring “curiosity and skepticism, wonder and sheer disbelief” to bear on their encounters with early film history.

PLAYING WITH GHOSTS

Newer, more glamorous technologies still glimmer with mysterious and sensual ancestors.

—BARBARA MARIA STAFFORD,
“REVEALING TECHNOLOGIES/
MAGICAL DOMAINS”

In a recent article on researching proto-cinema apparatus, Meredith Bak makes a convincing case for thinking about “play” and related “embodied” approaches—for example, assuming the role of users—as valuable resources for connecting with and understanding historical artifacts, such as nineteenth-century philosophical toys. “Archival research,” she explains, “is always haunted by what is inaccessible, the people, things, and experiences about which researchers have little choice but to speculate. Play, and the act of spending time and tactile attention with these devices, is one way for us to inhabit or approximate that original position.”⁷ The idea is a familiar one, particularly for historians who work in archives: handling historical artifacts has a unique experiential quality and an openness that can lead to innovative and surprising ways of thinking about and interpreting the past. For Bak, treating play as a guiding research method, one that is not at odds with careful and rigorous historical inquiry, makes the archive a space of improvisation, experimentation, and wonder.

For some time, the field of media archaeology has fostered similar conversations that have tremendous implications for thinking about pedagogy in film and media studies.

Echoing Elsaesser and anticipating Bak, for example, in 2014, Andreas Fickers and Annie van den Oever called for an “experimental media archaeology” that challenges the pervasiveness of *discursive analysis* in media historiography by focusing on *reenactment* as a primary method of historical research:

We believe doing historical re-enactments with old media artifacts is a heuristic approach that will offer new sensorial experiences and reflexive insights into the complex meanings and functionalities of past media technologies and practices. It aims at going beyond the “aesthetics” and “hermeneutics of astonishment” of media archaeology by turning “observers” into “experimenters.”⁸

The approach is linked to the emergence in the 1990s of what Erkki Huhtamo calls “media archaeological art” that plays with historical interanimations between old and new media, a topic to which I will return later. Here it is important that, for undergraduate students who may rarely, if ever, encounter film and media history in this way, playing with archival materials as experimenters has the potential to be transformative.

In the spirit of play and experimentation, I collaborated with Philadelphia-based animation artist Jacob Rivkin, who draws on archival work in his animations, to develop a kind of provenance research project for use with my undergraduate students.⁹ Our collaboration was initially organized around an open question: what does having students experiment creatively with archival materials afford in the context of studying the early cinema period? This evolved into a discussion about pedagogical innovation and the unique value of having students play with two perspectives at once: that of the “historian” and that of the “artist” or the “maker.” As an artist, Rivkin contributed a great deal to conceptualizing ways to merge media art and historiography in the classroom, while I developed modules for familiarizing students with research methods and proto-cinema and early cinema content. Muybridge emerged as a centerpiece for pedagogical and practical reasons. As a fixture of early cinema studies and the film history curriculum, he

offered a well-established site for intervening in how students see the early period. Moreover, Muybridge's extensive archive—a tremendous amount of which is digitized and publicly accessible—made it an incredibly valuable and, in my experience, underexplored teaching tool that could easily be adapted for classroom use.

PROJECT DESCRIPTION

I piloted the Muybridge project in an advanced undergraduate film history seminar in spring 2018 after workshopping it while on a fellowship at the University of Pennsylvania's Wolf Humanities Center. The course was a research methods seminar that combined foundational scholarship on early cinema with hands-on uses of archival materials. Each student chose one of the chronophotographic plates from Muybridge's 1887 *Animal Locomotion* series to work with throughout the semester. Their task was to develop a research dossier for their image organized around a guiding theme. For example, working somewhere between art and science, Muybridge produced an extensive series of photographic studies of models who appear to varying degrees in the nude. Men typically perform actions related to sports and skilled trades, while women typically appear in domestic, pastoral, and erotic situations. Muybridge also photographed patients with neurological disorders and analyzed the movements of animals at the Philadelphia Zoo, two subjects that he thematically linked in his work. With this in mind, some students focused on their plate's relation to topics such as gender, race, or disability in late nineteenth-century art; industrialization and the science of work; and the visual cultures of pornography, ethnology, sports, and natural history. Others worked in a different vein to place Muybridge's chronophotography in the contexts of early animation, urbanization, and the avant-garde.

Whichever route they took, students used the thematic focus of their research to address a series of questions about their individual plates:

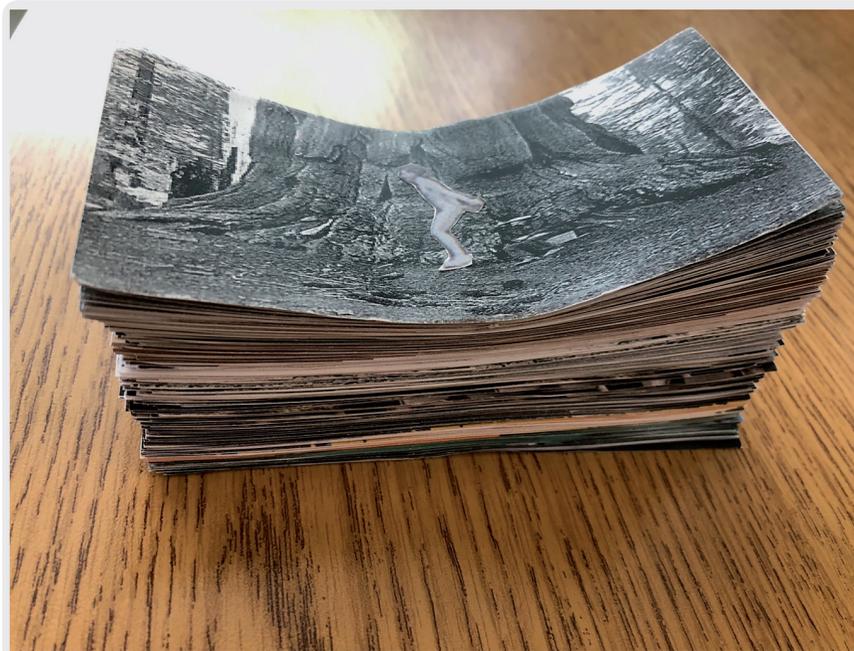
Who/what is the photographic subject?
When, where, and how (with what techniques and technologies) was the photograph produced?

What is the photograph's relationship with Muybridge's larger project, the landscape of late nineteenth-century visual culture, and early film history?

The majority of these questions are well traveled in scholarship on Muybridge, but for undergraduate students, becoming familiar with the topic required extensive research using primary and secondary source materials.¹⁰ Their work involved, for example, consulting maps and building plans pertaining to the *Animal Locomotion* series to determine the original location and design of Muybridge's studio, a long-since demolished structure on the University of Pennsylvania's campus. Muybridge's links with artists, hospitals, and other institutions in Philadelphia—for example, prostitution houses and the zoo—were also researched to determine where he obtained models and who those models may have been.

The broad goal of these exercises was to introduce students to archival-based research by having them map their photographs as part of a larger constellation of artifacts, discourses, and practices. One student, David Carozza, worked with Muybridge's uncharacteristic photographs of deer at the Philadelphia Zoo and developed a research project built on an interest in nineteenth-century urbanization and the significance of the deer as an emblem of nature's disappearance from city spaces. That project cast the "virtual nature" of the zoo in the light of an emerging discourse on modernity and a lingering impulse to capture an "untouched nature" that Muybridge previously exhibited in his landscape photography. Another student, Sophia Bertran, began by putting Muybridge's *Plate 733. Animals and Movements, Wild Animals and Birds, Elephant; walking* alongside representations of elephants in nineteenth-century American visual culture. From there, she researched the popular fascination with the animal in natural history museums and circuses, most notably with regard to P. T. Barnum's exhibition of Jumbo, a famous circus elephant who died spectacularly in a collision with a train in 1885 while Muybridge was working on his *Animal Locomotion* project.

The course was also designed to challenge students to be creative in how they investigate and represent early film history. My



Final Flip Book, approximately 260 frames and 18 sets of the original plate images

collaborator, Jacob Rivkin, helped to develop a series of short exercises that encouraged students to create innovative content for their research dossiers. These included, first, an “Iterations” exercise that asked students to rework Muybridge’s plates in creative and playful ways as artists have done for decades. A key point of reference was Thom Andersen’s experimental documentary *Eadweard Muybridge, Zoopraxographer* (1975), a reflexive film consisting of meditations on and reanimations of Muybridge’s images. Following Andersen’s lead, some students engaged with Muybridge’s archive by assembling his photographs into short motion pictures, GIFs, or animations, as Sierra Cossingham did when she translated Muybridge’s *Plate 730. Animals and Movements, Wild Animals and Birds, Tigress; turning around* into hand-drawn figures and then digitized them using Adobe Capture on her smartphone.¹¹ Interested in the materiality of working with archival materials, Marky Hinojosa created a flip-book that superimposed *Plate 362. Movements, Male, Back somersault* onto a selection of still images excerpted from Muy-

Figure 2. Marky Hinojosa’s flip-book assembled for *Plate 362*. Screen grab from Hinojosa’s final project website: <https://muybridgebackflipping.wordpress.com/>.

bridge’s archive and film history more broadly, turning the nineteenth-century optical toy into a playful meditation on Muybridge’s movement through time, from his landscape photography to the echoes of his chronophotographic techniques in the bullet-time effects used in *The Matrix* (1999) (Figure 2).

Other students re-created Muybridge’s plates by simulating his methods or by updating them with new subjects and new media. For example, Ali Doyle was interested in engaging critically with Muybridge’s tendency to cast women in what Marta Braun calls “fantasies from a distant pastoral age.”¹² To do this, Doyle re-created the strange temporality of *Plate 299. Movements, Female, Playing with a ball*, a sequence featuring a woman in a toga



Figure 3. Top, Plate 299. Movements, Female, Playing with a ball. From Eadweard Muybridge, *Animal Locomotion: An Electro-photographic Investigation of Consecutive Phases of Animal Movements, 1872–1885*, 11 vols, 781 plates (Philadelphia, 1887). Bottom, screen grab of Ali Doyle's Boomerang interpretation of Plate 299 from her final project website: <https://muybridgelifemotion.wordpress.com/muybridges-modern-woman/>. Reproduced with permission of the creator.

The Muybridge.

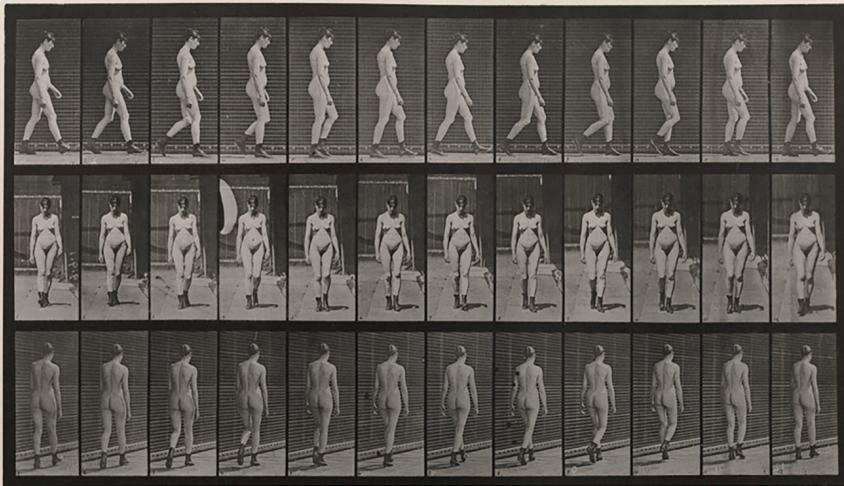


handling a tennis racket, by using an app called Boomerang on her smartphone to produce a looped recording of a model in similar dress performing mundane activities in New York City (Figure 3). In a similar engagement with the construction of gender in Muybridge's photography, Anthony Stephen Nunziata combined fragments of *Plate 193. Movements, Female, Dancing (fancy)* with his own photograph of a model to create a collage that puts pressure on conventions of masculinity and femininity in Muybridge's work (Figure 4). Finally, in the vein of Jena Osman's poetic-essayistic engagements with Étienne-Jules Marey's chronophotography, Mollie Murtagh combined her film studies and creative writing interests and drafted a poem for *Plate 22. Movements, Female, Walking, with high-heeled boots on* (Figure 5).¹³ The pairing of text and image raises questions about a range of topics, including nineteenth-century fashion, the politics of gender, anonymity in scientific research (the model is one Mrs. Cooper), and Muybridge's tendency to fetishize the female body in ways that strain the status of his photographs as "scientific" research. Isolating the model's boots and kneecaps also calls to mind Barthe's punctum and draws attention to the act of looking—the camera's and our own—which in turn works Muybridge's static image into a surprisingly dynamic viewing experience.

Figure 4. Anthony Stephen Nunziata's creative interpretation of *Plate 193*. Screen grab from his final project website: <https://anthonymunziata91.wixsite.com/muybridge>. Reproduced with permission of the creator.

Making and remaking historical photographs in this fashion gave students the opportunity, as Bak would have it, to inhabit Muybridge's original position. The goal was to help students develop a tactile understanding of the techniques and technologies Muybridge used while reflecting on the perspectives that the students themselves brought to bear on analyzing and interpreting his work.

Students were also required to complete an "Afterlives" exercise in which they put their Muybridge plates alongside other media artifacts that gesture to direct affinities and unexpected resemblances beyond the proto-cinema and early cinema periods. One requirement for this was that students had to find an "afterlife" for their individual plates that extends from Muybridge's historical moment deep into the twentieth century and even into our contemporary moment—for example, the repurposing and reimagining of Muybridge's photographs in



where high-heeled boots become
more provocative than a bare bottom
and eyes move stint-ed
as if the shutter themselves
to catch the wild wild west movement
of her left foot

then her right
each step makes her kneecaps stick out
like buttons on an old sweater
where the thread's too loose

who is she?
why, the sheriff!

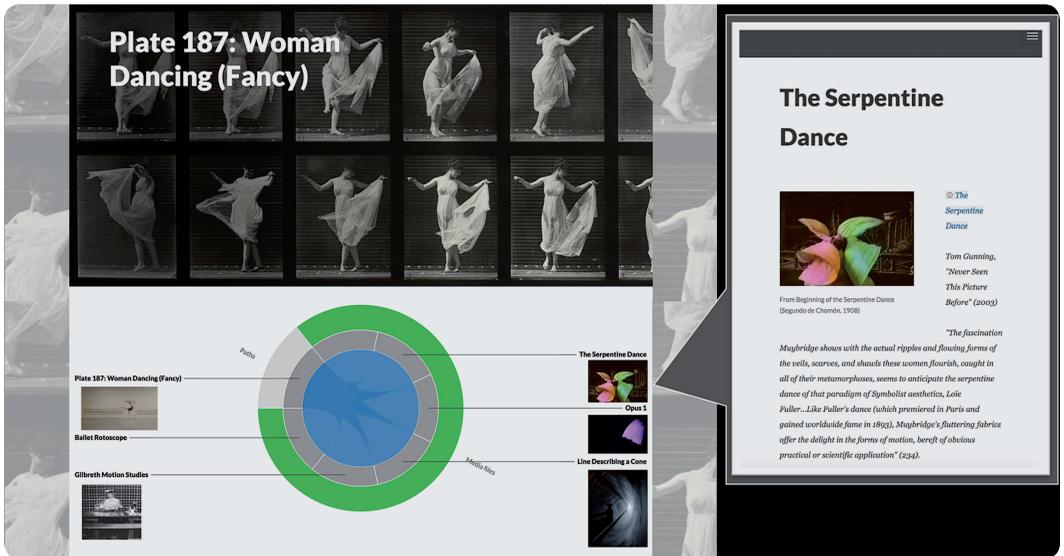
Mollie Murtagh, "Sonnet"

Figure 5. Mollie Murtagh's
"Sonnet" paired with *Plate 22*.
Reproduced with permission
of the creator.

the American avant-garde of the 1970s, the persistence of his techniques in digital high-speed sports photography and computer animation, or something more abstract. The example I provided for students linked the movement in *Plate 187: Woman Dancing (fancy)*, a recurring image in Muybridge's project, to Loïe Fuller's mesmerizing fin-de-siècle serpentine dance, the traces of light in Frank and Lillian Gilbreth's motion studies, the visual music of Walter Ruttmann's experimental animation *Opus 1* (1921), Anthony McCall's ghostly *Line Describing a Cone* (1973), and Masahiko Sato's mesmerizing *Ballet Rotoscope* (2011), in which a dancer's movements are traced with a computer-based algorithm. As part of a tutorial for the "After-lives" exercise, I organized the connections on a temporary web page that I designed using Scalar, a nonlinear digital publishing platform that encourages combining, layering, assembling, and juxtaposing a wide range of media content, including traditional forms of writing (Figure 6).¹⁴ The constellation connects Muy-

bridge's fixation on the dancer's swirling fabric to an enduring fascination with capturing the ephemeral spectacle of movement as such. The point was to help students think differently about seemingly obsolete and isolated media artifacts by discovering nonlinear patterns that reveal what Erkki Huhtamo calls "the cyclically recurring elements and motives underlying and guiding the development of media culture."¹⁵

Students took this exercise in interesting directions. Austin Goodman contemplated Muybridge's movement between art and science by putting *Plate 755. Animals and Movements, Wild Animals and Birds, Pigeon; flying* alongside Xavi Bou's project *Ornitographies*, a collection of high-speed, digitally composed photographs of birds, and Johannes Hogebrink's experimental animation (2016)



of photographs taken of Otto Lilienthal's aviation tests in 1891.¹⁶ Mollie Murtagh's poetic engagements with Muybridge's photographs of women evolved into a project about controlling bodies in motion. Focusing on the way in which Catherine Aimer, the model in *Plate 171. Stepping up on a trestle; jumping down, turning*, appears in a state of suspended animation, Murtagh explored connections between Muybridge and early animation that helped her think about the resonance of the plate with stop-motion techniques in Len Lye's *Rainbow Dance* (1936), Norman McLaren's "pixilation" animations of the 1950s, and the music video for the Talking Heads' "Road to Nowhere" (1985). For the "Iterations" exercise, she used these connections to create a hand-painted, cut-out animation of Catherine Aimer that invoked Muybridge's presence in the history of experimental animation (Figure 7). These projects and others involved students in challenging linear conceptions of history by privileging the idea of circularity and the ways in which, rather than being replaced and left behind, the past periodically returns and gets renewed in different forms.

At the end of the semester, students curated these creative exercises and the research they conducted by building simple websites with open source platforms like WordPress and Scalar. The digital format made it possible for students to present their research in the

Figure 6. Mock-up of my unpublished Scalar visualization showing an interactive map that connects Muybridge's *Plate 187* to a constellation of visual resemblances. Clicking on the thumbnails attached to the diagram leads the user to new pages with additional content (simulated in the pop-out on the right).

form of an interactive exhibition rather than a traditional research paper. Strong emphasis was placed on the aesthetic dimensions of the dossiers and the use of writing to make connections between the materials the students had collected and assembled. The goal was to have students craft interactive object lessons in early film history.

The curatorial dimension was important for familiarizing students with the constructedness and multiplicity of historical knowledge. As Paul O'Neill and Mick Wilson explain in *Curating and the Educational Turn*,

curating . . . is "processual" rather than "procedural" or instrumental. Rather than deploying a means-ends rationality, the processual mode entails both means and ends, however they may emerge in the flow of activity. The processual mode is



Figure 7. Top, Plate 171. Stepping up on a trestle; jumping down, turning. From Eadward Muybridge, *Animal Locomotion: An Electro-photographic Investigation of Consecutive Phases of Animal Movements*, 1872–1885, 11 vols, 781 plates (Philadelphia, 1887). Bottom, screen grab from Mollie Murtagh's cut-out animation of Plate 171 on her final project website: <https://plate171.wordpress.com/creative-project/>. Reproduced with permission from the creator.

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Creative Projects in Film History

Home The Muybridge Project Professor Williamson

About Posted on **May 13, 2018**

This website is dedicated to student work produced in my experimental undergraduate seminar, Creative Projects in Film History. The seminar offers students the opportunity to explore early film history by taking on the role of active interpreters and creative users of archival materials. Broadly, the goal is to teach advanced research methods in early cinema studies and media archaeology. The “experiment” is pursuing this goal by engaging students in careful research writing while also asking them to create media art out of archival materials. Rather than simply studying the historical contexts in which the cinema emerged, students work closely with archival materials, scholarly texts, and audiovisual media to develop an understanding of the assumptions involved in, and the consequences of, interpreting historical

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not linear, nor are its ends foreclosed; there is no imperative to achieve an exhaustive disclosure of final meaning, value or purpose.¹⁷

The digital format confronted students with the “processual” by literally making visible their specific interventions in the archive; the possibilities for alternative connections to the ones they made between the materials they presented; and, more broadly, the openedness of researching and interpreting archival materials.

Finally, the research dossier was designed to serve at least two functions beyond

Figure 8. Screen grab of Colin Williamson’s course website: <https://creativeprojectsinfilmhistory.wordpress.com/>.

the context of the classroom. Because of the creative work involved, students were encouraged to include their dossiers in their portfolios alongside other film and media productions, an important step in making the research they did relevant to their professional development. Additionally, and equally significantly, each dossier was added to a website that I designed for the course that is dedicated to making student work publicly accessible, along with the

exercise prompts and the syllabus for the Muybridge project (Figure 8). The idea is that the collection of student work from my seminar will grow each time the course is taught, and the archival materials and themes will be varied over time to map a rich constellation of undergraduate research on early cinema subjects. An excellent model for this is the pioneering Media Ecology Project (MEP), a collaborative digital forum that uses Scalar for conducting and sharing archival research on historical media.¹⁸ (While the majority of students who volunteered to have their projects included on the course site chose to use WordPress, a resource with which many students were already familiar, a stronger effort will be made moving forward to involve students in the use of Scalar as well, so that they can put their work in dialogue with the MEP.) My hope is that the “growing” archive possibility will help students see the work they do in the classroom as part of a conversation with a larger research community. To this end, I also presented student work from the seminar at the 2018 International Domitor Conference, “Provenance and Early Cinema,” held at the George Eastman Museum in Rochester, New York, where a large amount of Muybridge’s materials is currently housed. Drawing on the idea that “curating” retains its etymological roots in “caring for souls,” the stakes of addressing an audience outside of the classroom encouraged students to take great care and responsibility in presenting their historical research.

FROM MAUSOLEUM TO CURIOSITY CABINET

The proto-filmic framed display—an interior fragment of a world view—was open for browsing in a real sense. It was reassembled by the viewer, who read it in conjunction with her own mental geography as she wandered at leisure around the space, both physically and psychically.

—GIULIANA BRUNO, *ATLAS OF EMOTION: JOURNEYS IN ART, ARCHITECTURE, AND FILM*

Behind the idea of playing with Muybridge was an effort to have students create research pro-

jects that were *conceptually and formally* in dialogue with the field of early cinema studies. Historians of early cinema since Brighton have been generally unified by an effort to use archival materials to dispel the myth that film belongs to a linear history of technologies that culminated at the end of the nineteenth century in the “birth” of motion pictures. As Gunning explains, “to trace back cinema’s origins leads, not to a warranted pedigree, but to the chaotic curiosity shop of early modern life.”¹⁹ This nonlinear approach opens up film history to explorations of how the cinema shaped and was shaped by a vast network of media, practices, and institutions. While exploring this network, early cinema studies tend to engage openly with the methods and issues of researching and writing about the period and with the myths that have shaped our understanding of it. By creating projects that are visibly nonlinear and multimedial, students essentially performed a conception of the early cinema period as a “chaotic curiosity shop.”

The inspiration for this aspect of the project came from an unexpected source. In October 2016, I visited the Whitney Museum of American Art’s *Dreamlands: Immersive Cinema and Art, 1905–2016*. The exhibition invited museumgoers to wander, as a dreamer might, through a labyrinth filled with works that explored and experimented with the technological uncanny and the “cinematic” throughout film history. The works ranged from, among other things, obscure early actuality films and abstract animations to Walt Disney’s *Fantasia* (1940), McCall’s *Line Describing a Cone*, and a wide variety of artists’ renderings, video installations, and digital virtual reality experiments. An oneiric assemblage of images, sounds, and technologies, *Dreamlands* was broadly conceived as an immersive space for haptic engagements with a “matrix of interconnections between different historical moments.”²⁰ Christie Iles, one of the organizers, explains that the space, like a moving image, was “a structure in motion, a text in progress, a dynamic form striving to be another form, in a continual state of transformation, regeneration, and renewal.”²¹ In other words, *Dreamlands* was a history of the cinema modeled on the cinema itself.

The Muybridge project asked students to use archival materials to create similar

matrices—or what I am calling *constellations*—that promoted a sense of wandering through the landscape of early film history. The idea has a rich history in the context of museums and galleries. Consider, for instance, the *Devices of Wonder* (2001–2) exhibition at the Getty Museum in Los Angeles, an important precursor to *Dreamlands*. Curated by Frances Terpak and Barbara Maria Stafford, *Devices of Wonder* displayed a vast collection of optical devices from the 1700s to the present in an open-ended form inspired by curiosity cabinets of the early modern period. The devices in the exhibition were assembled according to visual resemblances, thematic affinities, and ambiguous associations and juxtapositions that were meant to stimulate intellectual curiosity about the connections between the old and the new. Confronted with the absence of a “simple linear logic,” Stafford explains, visitors were asked to take creative positions as active interpreters of historical media artifacts and “to see each object as part of a new constellation.”²² Here the wondrousness of both the objects and the form of their display was enlisted as a technique for fostering haptic and playful forms of research that resulted in a kind of interactive visual education in media history.

The related *Eyes, Lies, and Illusions* (2004–5) exhibition at the Hayward Gallery in London staged a similar encounter with old and new media. Centered on the proto-cinematic and early cinematic collections of experimental filmmaker Werner Nekes, the exhibition combined displays of historical artifacts with projections of animations from Nekes’s media archaeological film series *Media Magica* (1985, 2004) and installations by contemporary artists engaged in thinking about the long histories of optical devices. Sean Cubitt described the display of objects like eighteenth-century magic lantern slides and nineteenth-century philosophical toys in this context with the following:

While it is legitimate to place these devices in the past of cinema, it is misleading to try to keep them there to the exclusion of . . . other histories. Their abiding fascination is about the possibility of playing with them in the present, about the disorienting dislocation we experience when

confronting once-familiar, now forgotten, relics of the recent past, about their difference from contemporary media as well as their similarities.²³

Here *play* has two important meanings: the physical interaction with and use of old media and a kind of curious or imaginative wandering of the mind that renders the old and the new unfamiliar and mutually illuminating.

Erkki Huhtamo identifies the emergence of similar “disorienting” engagements with media history in media art produced around the so-called digital turn of the 1990s. Responding to the “kaleidoscopic, self-reflective play” of postmodern approaches to history in the 1980s, he explains, “‘archaeologically’ inclined media artists” began to create works that historicize old technologies while experimenting with and reflecting on how those technologies get recycled and reanimated by subsequent generations of media and users. One salient example is Paul DeMarinis’s *The Edison Effect* (1989), an audio installation that brought Thomas Edison’s early sound recordings back to life using computerized laser technologies. Later examples can be found in works like Kerry Laitala’s *Retrospectroscope* (1996), a kinetic sculpture that transforms nineteenth-century philosophical toys like the phenakistoscope and the Zoopraxiscope into a large stroboscopic screen featuring images inspired by Muybridge’s motion studies (Figure 9). These object lessons in film and media history reimagine old technologies less as dead or inanimate artifacts and more as objects that take on new lives once they “die.” For Huhtamo, such artful engagements with historical artifacts “could be . . . seen as a form of spatialized, conversational ‘historical writing,’ as a way of maintaining a dialogue with the technological past.”²⁴

There is pedagogical value in this kind of creative work with historical objects and ephemera that is gradually making its way into conversations about teaching. Two interesting models are the pioneering Media Archaeology Fundus directed by Wolfgang Ernst at Humboldt University, Berlin, and the Media Archaeology Lab directed by Lori Emerson at the University of Colorado, Boulder.²⁵ Both are laboratory spaces designed like curiosity cabinets where students researching media history and theory



are invited to operate, dissect, and curate a wide range of media artifacts. While in many cases, it may not be practical or even possible to provide students with access to museums, collections, and experimental media labs, the value of the laboratory approach is in how it treats historical media as “spaces of action for constructed attempts to connect what is separated,” to borrow Siegfried Zielinski’s phrase.²⁶ Or, as Andreas Fickers and Annie van den Oever write of “experimental media archaeology,” the value is in “turning archives and museums into research laboratories rather than mausoleums of past masterpieces.”²⁷

The Muybridge project was my attempt at employing some guiding themes from these innovative uses of historical materials to transform the proto-cinema and early cinema archive into a space of action for undergraduate students. The project was intentionally exploratory. I offer this reflection on it in a broad effort to contribute to a conversation about pedagogical innovation in the discipline and specifically to develop practical ways of using archival materials to help students see early cinema differently. Muybridge was useful

Figure 9. Screen grab of Kerry Laitala’s *Retrospectroscope*. Reproduced from *Documentation of “The Cosmoscope” and “The Retrospectroscope”* (Laitala, 2016), <https://vimeo.com/165539336>.

because his images are like constellations of questions about origins, modernity, and the cinema’s relationship with other media and fin-de-siècle visual culture that have guided research on early film history for decades. As a familiar ghost who haunts film history, Muybridge also proved to be a tremendous resource for introducing students to the processes of reuse, remediation, and recursion that shape the afterlives of archival materials and link them powerfully to our contemporary moment. Sophia Bertran, a student in my seminar, captured this when she explained, “I was given the creative freedom to come up with something of my own and learned to find connections that might be unexpected, even if they are hidden in plain sight.”²⁸ Having students work with Muybridge thus meant acquainting

them not only with an important period in film history but also with the stakes and methods of producing new knowledge about early cinema.

NEW LESSONS FROM OLD CINEMA

Am I then wrong to suggest that wonder is the special characteristic of the historian?

—CAROLINE WALKER BYNUM,
“WONDER”

My goal in thinking about creative practice as a method of learning about film history stems from an interest in early cinema as a resource for pedagogical innovation. When Elsaesser calls for a “hermeneutics of astonishment,” I take him to be suggesting that researchers should approach writing about film history in the way that fin-de-siècle audiences approached early cinema—that is, as a site of intense curiosity and experimentation at the intersection of diverse technologies, practices, and ideas. The point is that there is a unique value in mining the *qualities* of historical film and media and the experiences they once generated as models for producing and presenting knowledge about film and media history.

It is with this in mind that I asked students to see Muybridge’s archive as a “space of action” for playing with the ghosts of early film history. The projects that students created in my course were meant to function as digital cabinets of curiosity that use early cinema’s aesthetics of astonishment and display as models for learning about and presenting research on film history. By treating film and related media as both objects and methods of historical inquiry—that is, by using them, by puzzling over them, by reimagining them—students could assume active roles in discovering the past anew as a site of wonder. The premise that “wonder leads to learning” is obviously not new; it has roots in influential theories of the object lesson advanced in the 1700s and 1800s by figures like Noël-Antoine Pluche and Johann Heinrich Pestalozzi, not to mention being a point of focus in philosophical discourses that weave back through René Descartes and Francis Bacon to Aristotle.²⁹ By invoking wonder, astonishment, and curiosity here, I propose that having students create

their own “cinematic” object lessons in early film history can renew that period for them in ways that lead to innovative and impactful learning experiences.

To be clear, while I found that weaving early cinema studies, media archaeology, and media art together in the classroom created opportunities for innovative encounters with archival materials, I do not mean to suggest that traditional research writing should be replaced or devalued. I believe that working creatively with archival materials can help students develop meaningful research questions and conceptualize interesting projects in ways that bear directly on their written work. Indeed, with regard to the Muybridge project, though students were engaging in interesting ways and at a deep level with important questions about the proto-cinema and early cinema archive, in the end, their projects could have benefited from more carefully designed exercises geared toward strengthening their writing.

Furthermore, I must admit that I undertook this project from the position of a historian working in a discipline that is still negotiating the seductions of “new” digital media and trying to rethink the practical roles and uses of technology in classrooms. For the most part, the term *practice* is reserved for production courses that, in my experience teaching in integrated film studies programs, are drawing students who are looking to be trained as “makers” so that they can be competitive in a world that is increasingly reliant on the creative uses of (audio)visual media. The maker culture seems to have fueled the troublingly ahistorical perception among many students that the value of studying the cinema’s past has been eclipsed by the novelty of our current digital landscape. The perception is understandable. Discursive practices that emerge during periods of significant change in the history of modern media are predominantly shaped by teleological tropes of supersession—hence the “death” of cinema discourse that attended the digital turn in the 1990s. The perception is perpetuated in a way by the fact that, despite the commitment of many film studies programs to integrating critical studies and production, the two tend to be separated rather glaringly at the curricular level. The separation makes it difficult for many students to see how

inherently linked historiography and production, for example, are as practices of critically engaging with film and media culture.

The issue has recently begun receiving attention, especially with the spread of larger conversations about interdisciplinarity and the digital humanities in the academe. The MEP and much of the work presented in a previous special issue of *The Moving Image* have done a great deal to clarify the relevance of these conversations to archival research and film historiography.³⁰ The wide-ranging implications of digital methodologies for teaching—specifically the integration of new media in the film studies classroom—are still coming into view. Importantly, in 2013, the Society for Cinema and Media Studies established the *Journal of Cinema and Media Studies Teaching Dossier*, an online branch of its scholarly journal. The *Dossier* hosts meaningful discussions of, among other things, pedagogical methods and issues surrounding experimentation with digital media as tools for conducting research and analysis in critical studies courses. The effectiveness of such tools depends on careful considerations of what digital media are and how they work, questions that historians and theorists of film and related media are well positioned to answer.

One potentially rich option we have in seeking such answers, to return to Solnit's remark, is to follow the trails that lead from our digital present into the curiosity shop that is the archive of the cinema's past. It is striking how much the uncertainties that we continue to face in our discipline resemble those that shaped the cinema at its origins. The familiar questions that the digital turn raised about cinema and media studies—what is the discipline? what will it be? what should it be? what are its roles and responsibilities? what is its relationship with history and the archive? with theory? with education?—persist and grow in complexity. The rapid spread of digital technologies into every aspect of life and culture is also straining the discipline's ability to accommodate them in meaningful and productive ways. And, while new media create exciting possibilities for experimenting with moving image forms in the classroom, they also challenge educators to think through the values of traditional teach-

ing methods in light of the many pressures to incorporate innovative and undertheorized digital ones. I offer the Muybridge project as one measured response to these uncertainties, an attempt not only to think through what new media might help students discover about early cinema but also to understand what the archival remains of early cinema and proto-cinematic visual culture can teach us about our digital moment.

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NOTES

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2. Muybridge's pervasiveness is well documented on Stephen Herbert's encyclopedic website: <http://www.stephenherbert.co.uk/muybCOMPLETE.htm>.
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12. Braun, *Eadweard Muybridge*, 215.
13. For more on Jena Osman, visit <https://www.jenaosman.com/> and <https://pen.org/from-motion-studies/>.
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28. Sophia Bertran, e-mail correspondence with the author, July 3, 2018.

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