Photography as Knowledge Infrastructure

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THE foundations of modern photography emerged in 1839 when France's Louis Daguerre and England's Henry Fox Talbot, respectively, invented metal (daguerreotype) and paper (calotype) processes for fixing light-and-lens-based images onto tangible media. Almost as soon as photography became a publicly understood concept, discussions arose over whether it was a science or an art. This was not just an academic debate but an existential one. On one hand, its apparently dispassionate capacity to document the world suggested that photography offered an ostensibly authentic view of whatever the camera captured—an assessment that diminishes the role of the photographer to that of technical agent. Considering photography as art, by contrast, foregrounds the creative practitioner whose mastery of technical processes enables an interpretive vision of a photograph's subject. This debate between scientific and artistic outcomes cannot be settled in part because photography is both. Yet Vered Maimon argues that from the moment of its emergence, photography's significance lay in the fact that it was neither a straightforward means of documenting truths through unmediated representation, nor a wholly imaginative endeavor; instead, it was an innovation that marked an "epistemological shift" in the relationship between imagistic representation and other forms of scientific, theological, and philosophical certainty.[1] In short, while we might think of photography as simply a technology of *image-making*, it was in fact a primary mode of *meaning-making* in the nineteenth century, and its value as such was actively under negotiation.

As a force of knowledge production, photography was a vital infrastructure for the consolidation of national identity and the transmission

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of culture. That any amateur could, by dint of some diligent study, become a capable practitioner of photography made it quickly pervasive. Its appealing portability and ability to record minute details rendered it foundational to disciplines from anthropology to botany to journalism, supported imperial projects, and enhanced leisure pursuits from drawing-room amusements to world travel. Reporters in the field photographed breaking news to provide detailed images as the basis for the engravings that filled illustrated periodicals (the halftone process for printing photographs in newspapers did not emerge until the 1890s). Globetrotters photographed the wonders of the world, and souvenir companies made a fortune selling images of exotic locations to armchair travelers who could only dream of being able to hire a guide to lead them personally through Egypt's pyramids.

In a testament to early debates about its evidentiary status, photography's influence as infrastructure grew precisely because photographs retained a pose of neutrality and yet could provide apparently classificatory data that confirmed interpretive ends. "Beginning with astronomical photography and moving to microphotography and portraiture," Geoffrey Belknap writes, the photograph became "less a visual object and much more an epistemological one."[2] From pseudoscientific uses—such as Francis Galton's composite portraits of criminal types or medical studies of mental illness and disability—to sentimental ones such as family portraiture, photography launched and codified taxonomies of human relationship by providing visual evidence that appeared to naturalize distinctions among people. Ethnographic portraits, for example, justified imperial power the world over. As Inhye Kang has shown, Japanese anthropologists used Western "visual technologies to study and exhibit ethnic others" to support claims of a "mixed-nation . . . at the dawn of Japan's imperial expansion."[3] In short, while photography seemed to reflect back to viewers what the world looked like or what was happening, *it actually made things happen*: anthropological photographs drove scientific racism, travel photography spurred a taste for global exhibitions and a frenzy of museum acquisitions, and news photographs offered perspectives that shaped the politics of war zones.

As the forgoing examples suggest, photography was a powerful tool because it incorporated both scientific claims to the role of an impartial observer and adjacency to the affective influence of other forms of visual art: practitioners could wield photographs to influence both viewers' emotions and their perceptions of reality. As such, photography was not limited to being a tool of empire but also shaped infrastructures of

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resistance. William Mervin Lawrence's hugely successful Dublin photography studio provides a compelling example. He grew his business selling views of Ireland as prints, stereoscopic cards, and magic lantern displays at hundreds of tourist agents, but as a committed photographer of Irish life, he also documented violent evictions of Irish families during agrarian rent-withholding protests in 1886.[4] Maud Gonne and William Butler Yeats would use Lawrence's eviction images to stage a protest during Queen Victoria's 1887 jubilee celebrations in Dublin. They sought to enhance anti-imperial sentiment by projecting these images onto a building adjacent to the celebratory jubilee light shows, providing an enormous and moving counternarrative that supported Irish home rule.

Although integral to the political and scientific projects that supported Britain's imperial dominance, photography's pervasive influence extended to domestic registers as well. The ideal of middle-class domestic relations built primarily upon affection rather than obligation emerged in part due to photographic forms, including family portraits, *memento mori* that soothed parents grieving lost children, the phenomenon of so-called "hidden mother" photographs (see fig. 1), and the advent of small pictures in purpose-built, portable formats (gem tintypes made for lockets, for example).[5] The broad availability of photography was the antithesis of oil portraiture, that costly, time-consuming precursor to the family photo. Although Elizabeth Eastlake (art critic, author, and wife of Charles Eastlake, who was simultaneously president of the Royal Academy and of the Photographic Society) sniffily pointed out that a "legion of petty dabblers" was making photography available even to "our lowest servants" by the mid-1850s, she nonetheless ardently embraced the vision of sentimental familial ties that was both motive for and consequence of democratizing access to the family picture.[6]

Photographic image-making became central to nearly every facet of nineteenth-century public and private life in part because of its unique configuration as infrastructure. Unlike the massive building projects perhaps most commonly associated with Victorian infrastructures (e.g., the railroad, sewer, or telegraph), photography depended primarily upon individual practitioners whose innovations spread through international channels. When France's Louis Blanquart-Evrard perfected albumen printing—the first photographic process to enable high-quality prints from negatives—directions for following in his footsteps were disseminated through groups such as the Photographic Society of London (which brought together professionals and amateurs to share techniques), in prominent periodicals like the *Philadelphia Photographer*, and

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Figure 1. A faded oval at the image's center indicates that this photograph was originally displayed behind a mat, which would have masked the hat brim and bosom of the mother. As with other ostensible "hidden mother" photos, she was not entirely erased: the knee on which the baby braces itself, and her supporting arm in a sleeve, would have remained visible. Carte-de-visite, ca. 1864–66, from the author's collection.

in detailed books on photographic techniques published on both sides of the Atlantic. Global markets were essential to photography's boom: by the 1870s a conglomerate of Dresden factories had become the premier commercial producer of albumen paper, and in the 1880s the Kodak Company launched the first cameras that could be used by complete amateurs who would not develop the film themselves. The immense reach of the medium may perhaps be measured by the fact that demand for photo-sensitive paper grew to such an extent that "at the height of its operation in the late 1880s, the Dresden Albumenizing Company . . . used 60,000 eggs per day" to extract the albumen necessary for coating its light-sensitive papers.[7]

Because it was an infrastructure whose scale was uniquely accessible to experimentation by amateur users, photography also had a broad

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scope for play. Even "for Talbot and other practitioners, the early image did not offer a unique 'irrefutable proof'" in the documentary vein, according to Maimon, "but presented a 'wonder.'"[8] That wonder, which for Talbot was about how photography engaged with metaphysical questions, became for swaths of the general public an appreciation for the wondrousness of a medium that could render visible so many things that would otherwise be unseeable: everything from vistas of foreign lands to cellular-level scientific discoveries to images of long-departed loved ones. "Wonders" and "astonishment," an 1852 article in the *Illustrated London News* promised, as it touted the fascinating nature and explained the workings of the newly invented stereoscope, which it gushed "must rank amongst the most interesting and most marvellous of modern discoveries."[9] By the 1870s, the stereoscope, a handheld viewing device whose lenses turned specially photographed scenes into an optical illusion of three dimensions, was available at a variety of price points, with hundreds of thousands of card images to choose from (fig. 2). Advertisements in major papers touted the fitness of this perfect present for whiling away family hours on cold winter's evenings, edifying and delighting viewers of all ages.

The general public was captivated by giddy efforts at photo manipulation that developed in the second half of the century. Merry



Figure 2. When a viewer presses their face to the frame, the stereoscope isolates the eyes from each other. The left and right images of each scene are taken from slightly different angles; a viewer slides the card closer until it comes into focus, whereupon the brain merges the images to produce a 3D effect. From the author's private collection.

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pranksters created fads for trick pictures, such as of themselves carrying their own heads under their arms. And stereoscopic studios used photographic manipulation techniques to produce cards to illustrate ghost stories (fig. 3). It was only a short step to fairy photography—the most famous being the 1917 Cottingly fairy photographs produced by two young sisters—and other genres of picture that purported to document supernatural or extrahuman phenomenon.

Many of these modes were meant for light amusement; however, the sharp rise in the popularity of spiritualism coincided with explorations of photography as a form of entertainment and as a mode of documenting families, which rendered it almost inevitable that serious spirit photography would emerge. By the 1870s, professed mediums were having their séances photographed to provide images of long-deceased beloveds comforting their grieving relatives, and specialized spirit photographers were making handsome profits from images purported to be of personal or high-profile ghosts (e.g., recently deceased public figures). Spiritualists claimed the documentary power of photography as evidence of the veracity of their medium work—claims that incited fierce debates about fraudulence from within the spiritualist movement itself, as debunking frauds was seen as a means of proving that other practitioners really were communing with lost souls.[10]

Although there were several prominent, ardent believers in the veracity of many of these photographs—perhaps, most notably, Arthur Conan Doyle—by the 1880s "instructions for successfully taking 'spiritualist' photos through trick techniques were widely available in photo



Figure 3. "The Haunted Lane," by Melander and Bro., Photographers, ca. 1875. Library of Congress Prints and Photographs Division, www.loc.gov/item/2006686826.

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magazines."[11] Double exposure was the most common kind of fraud for such pseudodocumentation, although there were other clever tricks including "traced or cut-out ghosts or other figures imposed on transparent material" or "the ghost placed cleverly inside the camera, which was prepared ahead of time" so that the glass photographic plates (the negatives of their day) could be demonstrated to be entirely free of trickery.[12]

While it might seem easy to reject all such photographs as hoaxes, Lin Young demonstrates that there were spiritualists who "were sincere and ardent would-be scientists" and that their "scientific ambitions and philosophical desires to rationalize the unknowable world"—to explore questions such as "could the soul be examined as a material entity, and if so, what was it made of, and how did it function?"—ought to be respected.[13] Young demonstrates, for example, that Georgiana Houghton's diaries, photographs, and connections to scientific conversations sought to dissolve boundaries between material and spiritual, and that her work as a spiritualist—including her photographs—should be taken as a serious attempt to grapple with fundamental mysteries of the soul.

One's willingness to believe in the veracity of spirit photographs notwithstanding, this use of photography as a bridge between the scientific and spiritual realms aligns with many other nineteenth-century applications, which sought to shape people's ideas about phenomena they did not understand. Whether those phenomena were cultural Others, microorganisms, or newsworthy events half a world away, photography promised a level of precision that collapsed interpretation and knowledge into a single frame. The perceived authenticity of photographed images sat in useful tension with its potential as a visual art form that invited experimentation with image-making. It was a form of infrastructure that served as both link and conduit, not merely connecting objects or ideas across time and geography, but attempting to make them knowable.

The wonder of photography lay in its capacity to place the entire world—including realms undiscernible by the naked human eye—in front of any viewer willing to spend a few pennies to take a look. Cheryl Spinner has shown that public fascination with the stereoscope lay in its ability to combine enchantment with analysis. Photography in all its forms, I would argue, drew together wonder and science, documentation and interpretation both by and for a public that almost immediately endorsed the power of visual images to create powerfully persuasive meaning in and of their world.

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Notes

1. Maimon, *Singular Images,* ix.
2. Belknap, "Photographs in Text," 132.
3. Kang, "Visual Technologies," 762.
4. For detailed discussion of Lawrence's photographs as well as this protest, see Carville, "Mr Lawrence's Great Photographic Bazaar."
5. My essay "Gestures of Connection" explores these forms of photography and their role in forwarding midcentury notions of familial intimacy.
6. Eastlake, "Photography," 241.
7. Crawford, *Keepers of Light,* 47.
8. Maimon, *Singular Images,* xviii.
9. (From a Correspondent), "The Stereoscope," 229.
10. The motives and tricks of spirit photography were built on the foundation of art/science debates within the medium, as Susan Shelangoskie has shown ("Domesticity in the Darkroom").
11. Stiegler, "Photographs," 145.
12. Stiegler, "Photographs," 166.
13. Young, "A Lady's Guide," 258.

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