



EARLY VISUAL MEDIA LAB

C I C A N T

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**FRANCIS FRITH:
NINETEENTH-CENTURY
IMMERSIVE MEDIA
PIONEER**

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Abstract

Francis Frith (1822–1898) is considered one of the great topographical photographers of the nineteenth century and a pioneer of immersive media for his groundbreaking stereo photography work. In 1856 he began his first of three expeditions to Egypt and the Holy Land, the last of which concluded in 1860. An aspect of his photographic practice was to capture the region using stereo photography, which creates an illusion of a single three-dimensional image from two separate images. Using primary and secondary sources related to Frith's photographic pursuits and travels in the region, this article focuses on Frith's technological achievements using stereo photography in Egypt, from his production techniques to the dissemination of his stereo images in his 1862 book, *Egypt, Nubia, and Ethiopia. Illustrated by One Hundred Stereoscopic Photographs, Taken by Francis Frith for Messrs. Negretti and Zambra; with Descriptions and Numerous Wood Engravings, by Joseph Bonomi ... and Notes by Samuel Sharpe.*

Keywords: *Stereoscope; Immersive media; Francis Frith; Cultural heritage; Egypt; Collodion*

Introduction

Media archaeology is a field that offers opportunities to understand emerging digital media technologies through the examination of the past—especially obsolete and almost forgotten media apparatuses. From the latter half of the eighteenth century through the early twentieth century, novel immersive media products included the *vue d'optique*, panorama, and stereograph. A recurring theme found within immersive media products is the representation of culture and heritage. By studying the apparatuses and the content of past immersive media products, a more robust discourse may occur for those re-presenting cultural heritage using contemporary immersive media technologies.

Francis Frith (1822–1898) is considered one of the great topographical photographers of the nineteenth century. He is also considered a pioneer of immersive media for his groundbreaking stereo photography work. Born in 1822, Francis Frith dedicated himself to photography after selling his profitable grocery business in 1854 (Skinner, 2022, pp. 31-32, 349). A devout Quaker with an entrepreneurial spirit, Frith learned the craft of photography in Liverpool and subsequently took this knowledge abroad to the Near East. Francis Frith believed that the camera represented its subject truthfully and that no other art form could compare. In the 1859 article “The Art of Photography,” Frith writes, “the most obvious, which undoubtedly lies at the root of its popularity, is its essential truthfulness of outline, and, to a considerable extent, of perspective, and light and shade. ... We find it difficult to express how fully, and for how many different reasons, we appreciate this attribute of photography. ... It is an attribute, to which we believe,

there is, in the whole range of Art, no parallel; to whose uses and delights we can assign no limits, and shall, of course, not attempt to enumerate them (Frith, 1859, pp. 71–72).

The mid-nineteenth century was a time of uncertainty for European and American Christians, due to contemporary discoveries and developments in the sciences, which contradicted the Bible’s story of creation. Scientific ideas such as Darwin’s theory of evolution questioned the origin of Victorian moral and spiritual values (Bowler, 1992). Due to the Bible’s relationship to the Near East, Victorian-era European and American Christians had a perceived relationship with the region, which pointed to the origins of family and spirituality (McGeough, 2021, p. xx). With the camera’s ability to capture a “truthful” image, Frith hoped that his images of the places associated with the Bible would diminish these uncertainties and strengthen religious faith (Skinner, 2022, p. 46). Armed with three cameras (a standard studio camera using 8-by-10-inch glass plates, a large format camera that accepted 16-by-20-inch glass plates, and a double lens stereo camera to produce stereoscopic views), he set out with a goal to document places associated with the Bible as well as the temples and monuments of ancient Egypt (Williams, 2001, p. 171). In 1856 he began his first of three expeditions to the Near East, the last of which concluded in 1860. Frith’s trailblazing topographical photography produced expertly crafted and well-executed photographs that capture a moment in the history of Egypt. This country has been radically altered by modernization, archaeology, and tourism. Using both primary and secondary sources related to Frith’s photographic pursuits and travel endeavors in the region, this article focuses on his technological achievements using stereo photography

in Egypt, from his production techniques to the dissemination of his stereo images through his novel 1862 stereoscopic book, *Egypt, Nubia, and Ethiopia. Illustrated by One Hundred Stereoscopic Photographs, Taken by Francis Frith for Messrs. Negretti and Zambra; with Descriptions and Numerous Wood Engravings, by Joseph Bonomi ... and Notes by Samuel Sharpe ...*

An Overview of Francis Frith's Expeditions

In his unpublished 1884 memoir, Frith poetically remembers his choice to travel to Egypt and the Holy Land: "Following my bent towards the romantic and perfected past, rather than the bustling and immature present, I went East not West. I would begin at the beginning of human history: I would track the Sun back to his rising and see the lands upon which his beams first fell" (Skinner, 2022, p. 45, 380; J. Skinner, personal communication, Nov 20, 2023). Frith began his first of three expeditions to Egypt and the Holy Land in 1856 and concluded his last journey to the Near East in 1860. In *A Grand Spell of Sunshine: The Life and Legacy of Francis Frith*, Julia Skinner corrects inaccuracies by re-examining primary sources about past writings on Frith's expedition dates and travel routes to the Near East (Skinner, 2022). This article draws on and reaffirms Skinner's findings in connection with Frith's stereograph series, discussed later in the article.

By the 1850s, travel to Egypt and the Holy Land was becoming standardized. To prepare for his trip abroad, Frith relied primarily on two guidebooks: Sir John Gardner Wilkinson's *Handbook for Travellers in Egypt* (John Murray, 1847) and Edward Robinson's *Biblical Researches in Palestine* (John Murray, 1856) (Nickel, 2004, p. 58). His expeditions to the

Near East were methodically planned and executed. The first began in autumn of 1856, when Frith traveled with Francis Herbert Wenham (1824–1908) and three others from Liverpool, England, to Alexandria, Egypt. Wenham, an engineer and inventor, assisted Frith with his photographs (Wenham, 1898, p. 523-24). The expedition's first leg focused primarily on the temples and monuments of ancient Egypt. After arriving in Alexandria, Frith and his colleagues took the train to Cairo and set sail on their dahabeah upriver to the Second Cataract at Wadi Halfa. On their return voyage, Frith photographed the ancient sites of Nubia and Egypt as they encountered them (Skinner, 2022, pp. 53–55). After returning to Alexandria, Frith set out on the second leg of his expedition, traveling to Palestine, Syria, and Lebanon. After traveling from Alexandria to Jaffa via steamboat, Frith, Wenham, and their team trekked toward Jerusalem by way of Ramleh (now Ramla) and arrived in Jerusalem on April 22, 1857. From there, they traveled to Bethlehem, Hebron, the Dead Sea, Nazareth, Tiberian, Baniyas, Damascus, and Baalbek, finishing in the Cedar Groves of Lebanon. Upon leaving Lebanon, they revisited Jaffa and then Alexandria, returning to England in July 1857 (Skinner, 2022, pp. 90–103).

Frith departed for his second expedition to the Near East in November 1857, this time without the assistance of Wenham. Arriving in Egypt for the first part of his tour, he photographed Islamic architecture, street scenes in Cairo, and ancient monuments. In March 1858, Frith and his companions departed Cairo to photograph Sinai and Jerusalem—retracing the Biblical route of Moses and the Israelites during the Exodus (Skinner, 2022, pp. 118, 120). After Frith completed his

second expedition, he left Jerusalem via Jaffa and returned by steamer to Alexandria, where he departed for England, arriving home in May 1858 (Skinner, 2022, p. 137).

Frith began his third and final trip to Egypt June 1859, once again with Wenham's assistance. His original intention for this expedition was to find the source of the Nile. For this purpose, Frith and Wenham brought a high-pressure steam launch from England to venture up the White Nile tributary. However, due to the vessel's size and a series of difficulties, the vessel was deemed unsuitable for the journey, and Frith and Wenham abandoned their plans (Skinner, 2022, pp. 146–152).

Wenham returned to England, where he applied for a patent to improve steam engine performance, and Frith decided to make another photographic voyage up the Nile by dahabeah (Skinner, 2022, pp. 146–152). After photographing Cairo and Giza, Frith set sail upriver in November 1859 and reached Wadi Halfa in January 1860. He then traveled south to North Sudan, to the Temple of Soleb, just beyond the Third Cataract (Skinner, 2022, p. 153). He spent 18 days in this area photographing ancient monuments and temples, before returning to Wadi Halfa to begin a journey down the Nile to produce better versions of some previous photographs, to photograph new subjects he had previously missed, and to attempt technically difficult compositions that he had felt were out of his reach on his first expedition (Skinner, 2022, p. 158). Frith completed his final expedition to the Near East in late spring of 1860, after which he returned to England to begin his next chapter as husband and father and to focus on establishing his own photographic publishing company (Skinner, 2022, p. 170, 368).

Egypt and the Wet Collodion Photographic Process

While living in Liverpool, Frith embraced the wet collodion photographic process published by Frederic Scott Archer (1813–1857) in March 1851. Archer developed the wet collodion photographic process because he was dissatisfied with the soft images that the calotype process produced and its long exposure time. While collodion was already used as a surgical wound dressing, Archer discovered that it could also be used for making a photographic image. The collodion photographic process was revolutionary for photographers of the time because it appeared to combine the ability to achieve the sharp and crisp details of the daguerreotype with the ability to make multiple copies as in the calotype. Frith perfected his collodion photographic process skills while a member of the Liverpool Photographic Society, which he helped found in 1853 (Skinner, 2022, pp. 26–27; "Annual Meeting of the Liverpool Photographic Society," 1854, pp. 30-31).

Nevertheless, Frith was uncertain of the photographic outcomes, as they were untested in desert conditions. Francis Wenham, who had accompanied Frith on the first expedition (1856–1857) and the start of the third expedition (1859–1860) wrote in later years, "We were fully equipped with all photographic apparatus and necessaries. This was in the early days of the wet-collodion process. We did not anticipate much in the way of successful results, for, as far as we were aware, we were the first to carry the process into hot countries" (Wenham, 1898, p. 523). Frith and Wenham's concerns were warranted. Frith had to overcome adverse desert conditions such as extreme heat and



Fig. 1 389, "View of the Two Largest Pyramids at Geezah, Taken from The Ancient Causeway," 1857, Francis Frith, glass stereograph (albumen print on glass). Private collection.



Fig. 2 328, "View of the Portico of the Temple of Dendera," 1857, Francis Frith, glass stereograph (albumen print on glass). Private collection.



Fig. 3 305, "The Rock of Abouseer and the Second Cataract," 1857, Francis Frith, glass stereograph (albumen print on glass). Private collection.

blowing sand so that his negatives developed properly and did not contain specks of dust or sand. Shortly after photographing, he needed to process the negatives in his tent (figures 1 and 2) and sometimes in tombs or temples, whichever offered the most advantageous conditions at the time. Frith wrote, "Many of *my* photographic pictures were made in Tombs! To save myself the trouble of pitching my dark tent, and for the sake of their greater coolness, I very often availed myself of a rock-tomb" (Frith, 1862b, "Absalom's Tomb, Jerusalem").

The stereograph *The Rock of Abouseer and the Second Cataract* (figure 3) shows a beautiful panoramic view of the first and second Cataracts—two of the six points in the Nile River

between Aswan and Khartoum. It was at this location that Frith first encountered the difficulties of photographing in Egypt using the wet collodion process:

The difficulties which I had to overcome in working collodion, in those hot and dry climates, were also very serious. When (at the Second Cataract, one thousand miles from the mouth of the Nile, with the thermometer at 110° in my tent) the collodion boiled when poured upon the glass plate, I almost despaired of success. By degrees, however, I overcame this and other difficulties; but suffered a good deal throughout the journey from the severe labor rendered necessary



Fig. 4 377, "The Colossi of the Plain, the celebrated statues of Memnon at Thebes," 1857, Francis Frith, glass stereograph (albumen print on glass). Private collection.

by the rapidity with which every stage of the process must be conducted in climates such as these; and from excessive perspiration, consequent on the suffocating heat of a small tent, from which every ray of light, and consequently every breath of air, was necessarily excluded. I think I will confess to a weakness for rapid production in all that I undertake. My views have been taken, for the most part, whilst my friends were hastily inspecting the scenes or object copied. (Frith, 1858a, introduction)

It was not only the dust and heat that frustrated Frith in the production of his photographs—people were also obstacles.

Frith's writing reveals that locals and travelers sometimes hindered his photography production. For example, when he was photographing at the Colossi of Memnon in Thebes (figure 4), both locals and travelers inadvertently interfered for a time with his ability to photograph the site:

While arranging my apparatus to take this picture, a party of some five or six travelers rode up, accompanied by a rabble of Arabs, who offered pieces of mummy cloth, &c., for sale. I have reason to know that what I am about to write is correct, for I had to suspend my operations whilst the party was moving about the bases of the statues and had nothing to

do now but watch anxiously for signs of their departure. But how true soever my story, it will scarcely be believed, that at least two or three of the party spent their whole time on the spot in haggling with the Arabs over paltry purchases, and the moment they were concluded—my word for it—they threw themselves upon their donkeys, and rode off to the next “sight,” *without ever having raised their eyes to the glorious old statues of Memnon!* (Frith, 1858b, “The Statues of Memnon, Plain of Thebes”)

Despite the obstacles he encountered when photographing in Egypt and the greater Near East, Frith was determined to create significant work. With his technical competence, artistic vision, and sense of purpose, he accomplished his goal of creating technically and aesthetically beautiful photographs, which today are considered some of the best photographic work of their kind.

Francis Frith’s Stereographs and Stereoscopic View Book

Frith believed the camera represented its subject truthfully and that other art forms paled in comparison (Frith, 1859, pp. 71–72). The Victorian-era British hungered for images of the Near East because of a growing interest in the region’s history, archaeology, and antiquities and its association with early Christianity (Skinner, 2022, p. 46). Popular and educational, Frith’s stereographs were considered more accessible to a greater range of people than his books because of their appeal to spectacle and sensation and their reasonable cost (Nickel, 2004, p. 76). At this time, stereoscopes were available in

a variety of models and sizes, from handheld viewers to large floor or countertop designs that held multiple stereographs. In 1856, Robert Hunt wrote in the London-based *Art Journal* that “the Stereoscope is now seen in every street; it is found in almost every drawing room; philosophers talk learnedly upon it, ladies are delighted with its magic representations, and children play with it” (Hunt, 1856, p. 118).

Before traveling to the Near East, Frith and Wenham had experience with stereoscopic photography. Nevertheless, when necessary on their expedition, Frith and Wenham sought to experiment with exaggerating the depth when they could not find a suitable foreground, which is why some of Frith’s stereographs when viewed may appear to have a hyper-stereoscopic effect. In a letter printed in the *Liverpool and Manchester Photographic Journal*, Wenham wrote, “Any degree of angle that will produce the desired effect [the appearance of solidity and relative distance] is correct and advisable. ... This I frequently [had] been obliged to do in cases where, with the usual angle, I could not obtain any stereoscopic effect at all” (Wenham, 1858, pp. 117–118).

Before embarking on his first expedition to Egypt and the Holy Land, Frith began selling his stereographs of domestic settings with the London-based firm of Negretti and Zambra, a manufacturer and retailer of optical and scientific instruments, operator of photographic studios and acted as a publisher, in January 1856 (Nickel, 2004, p. 175). In autumn of 1856, before traveling to Egypt, Frith entered into another agreement to market his stereographs of Egypt with Negretti and Zambra, (Darrah, 1997, p. 131). The stereographs were first sold on card stock as opposed to glass

transparencies, for fear of piracy (figures 5 and 6; Liverpool and Manchester Photographic Journal, 1857, p. 100). Paris-based Ferrier & Soulier began selling Frith's glass stereographs in 1858 (Schimmelman & Cameron, 2016, p. 49). The glass stereograph uses the *verre églomisé* presentation, referring to the process of applying both a design and gilding onto a glass surface—with its gold-outlined, double-arched windows and black background—which was the standard for Frith's glass stereographs (Schimmelman & Cameron, 2016, p. 49).

Francis Frith produced three core sets of stereographs: (a) Egypt and the Holy Land, (b) Second Series, and (c) a book containing 100 tipped-in stereoscopic views entitled *Egypt, Nubia, and Ethiopia. Illustrated by One Hundred Stereoscopic Photographs, Taken by Francis Frith for Messrs. Negretti and Zambra; with Descriptions and Numerous Wood Engravings, by Joseph Bonomi ... and Notes by Samuel Sharpe ...*. The first two sets are numbered stereographs beginning at 300. The Egypt and the Holy Land set is broken into two parts, photographed during Frith's first expedition to Egypt and Palestine, between September 1856 and July 1857. The first part, *Egypt and Nubia*, consists of 100 stereoscopic views numbered 300 through 399 (Frith, 1857). The second part, *The Holy Land*, consists of 58 stereoscopic views numbered 400 to 457 (Frith, Negretti & Zambra, 1858). In such articles as an 1858 column entitled "Stereoscopic Views of Egypt," written for the London-based *Times* newspaper, the caliber of Frith's stereographs of Egypt was recognized: "[It is] the first serious and worthy effort that has been made to develop the educational uses of the stereoscope as an artistic, geographical, and

historical point of view. ... The views are to be commended not only for their photographic excellence but for the effective selection of the points from which they are taken" (Van Haaften & White, 1980, p. xiii).

The second set of 65 stereoscopic views, Second Series, reflects Frith's second expedition (November 1857–May 1858), during which he traveled to Egypt and then through Sinai to Jerusalem—retracing the biblical route of Moses and the Israelites during the Exodus. These stereographs are numbered from 458 to 523 (Negretti & Zambra, 1874, p. 253; P. Burford, personal communication, July 8, 2024). Most recognition for Frith's stereoscopic views came from his first set of stereographs, and little has been found regarding critical acclaim for this second set.

The third set, presented in Frith's 1862 book *Egypt, Nubia, and Ethiopia*, consists of 100 stereographs from his final expedition to Egypt, from summer of 1859 through late spring of 1860. This series of tipped-in views is arranged geographically, from north to south, beginning with Cairo and the Pyramids and finishing in Ethiopia at the temple of Soleb (Frith et al., 1862, p. vii). The noted biblical scholar Reverend Samuel Sharp and the artist, writer, and curator Joseph Bonomi provided notes and commentary to Frith's book of stereoscopic views. Both were considered experts in the field, so their involvement added to both the prestige and caliber of the publication, which garnered a medal at the International Exhibition of 1862 for its adaptation of stereo photography to book illustration as well as receiving other noted critical praise (Nickel, 2004, p. 82; Van Haaften & White, 1980, p. xviii).



Fig. 5 325, "Traveller's Nile Boat, or Dahabeeh with Nubian Scenery and Figures," 1857, Francis Frith, glass stereograph (albumen print on glass). Private collection.



Fig. 6 325, "Traveller's Nile Boat, or Dahabeeh with Nubian Scenery and Figures," 1857, Francis Frith, card stereograph (albumen print). Private collection.

Francis Frith's Contribution to Egypt and Egyptology

In a time when photography was still in its infancy and Egypt was rapidly transforming, Francis Frith documented significant architectural structures—some of which were being dismantled and destroyed due to repurposing of building materials, vandalism, decay, taking of travel souvenirs, and acquisition of artifacts for museums and collections. Frith's photographs provide important documentation for Egyptologists to better understand existing structures and those now lost. While absent from Frith's stereographs and photographs in general, the modernization of Egypt and its tourism industry were rapidly developing. Including these elements was not an aspect of Frith's intent. He wanted to give the viewers a vision of Egypt's ancient monuments, temples, and biblical sites. At the same time, he was mindful of the impact of these changes and understood the importance of photographically documenting Egypt's ancient temples and monuments. Frith wrote of his concern:

In addition to the corroding tooth of Time, and the ceaseless drifting of the remorseless sand, Temples and Tombs are exposed to continued plundering—Governors of districts take the huge blocks of stone, and the villagers walk off with the available bricks, whilst travellers of all nations break up and carry off, without scruple, the most interesting of the sculptured friezes and the most beautiful of the architectural ornaments. (1858a, introduction)

Frith was also concerned about the loss of significant Islamic structures (figure 7) and understood that the reuse of materials from older buildings in Egypt was not a new phenomenon. He wrote of this in his book *Egypt, Sinai and Palestine*:

One of the causes of its ruin may be observed at the near angle: it has been quarried for other buildings; and the hewn casing-stones, with admirable decorations, and beautifully carved Arabic inscriptions from the Kur-an, have been torn down, probably to form the lower walls of modern houses. ... We may remark that the ancient Egyptians were not free from the same reproach; instances occurring of a king sculpturing his name over that of his predecessor who had erected a temple, even that of his own father; while one dynasty thus either adopted, or destroyed and re-built, the temples of those that had gone before. (1862a, "Tombs in the Southern Cemetery, Cairo")

While some criticisms of Frith's work included the absence of contemporary Egyptian life, it should be noted that the photographic exposure time—six to 45 seconds—limited Frith's ability to capture such moments. Furthermore, this was not part of his objective in documenting Egypt, as he primarily sought to document Egypt's temples and monuments and places associated with the Bible, both to provide scientific evidence of Biblical sites through photographic documentation and to satisfy audiences' thirst for knowledge concerning ancient Egypt.



Fig. 7 398, "Tombs of the Memlook Kings at Cairo," 1857, Francis Frith, glass stereograph (albumen print on glass). Private collection.

Concluding Remarks

With his methodically planned expeditions, talent, and tenacity, Frith produced technically and aesthetically enticing images of Egypt's tangible heritage. He considered his experience in Egypt profound: "I do not expect to be able to convey to the mind of the reader any true idea of the strange feeling of interest and wonder which the first views of these Nile sculptures inspire. For myself, I confess that although I was of course prepared to see an abundance of hieroglyphic sculpture, I was, nevertheless, completely taken by surprise. I was not at all prepared to realise such vivid contact with the very minds and feelings of the men of 3000 years ago" (Frith, 1858a, "Sculptures from the Outer Wall, Dendera").

Despite photography's limitations at the time, Frith produced significant work that provides insight into the state of Egypt's monuments, temples, and tombs, some of which no longer exist. Future research will focus on Frith's travels to Upper Egypt and his stereoscopic views of the Nubian temples and monuments, while also addressing his stereo photographic style and intent and his influences, which include the works of the artist David Roberts (1796–1864) and the writings of the Egyptologist Sir John Gardner Wilkinson (1797–1875).

Francis Frith should be remembered not only for his role in trailblazing expeditionary topographical photography, for creating beautiful photographs that capture a moment in time of Egypt's monuments, temples, and tombs, which have

now been radically altered by modernization, archeology, and tourism, but also for his pioneering work in immersive media, with stereoscopic views of Egypt that have helped fulfill audiences' intellectual appetite for Egypt's awe-inspiring tangible heritage.

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