

## Celebrating photography's two fathers

**Roger Watson and Helen Rappaport: Capturing the light: A true story of genius, rivalry and the birth of photography. London: Macmillan, 2013, xiv+306pp, £20 HB**

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In early 1839, two very different geniuses, one French and one English, told the world about their discoveries of two different ways of creating permanent photographic images. Anticipating the 2014 celebration of the 175th anniversary of those events, *Capturing the Light* comes as a welcome gift recognizing the birth of photography. More than a rich, if condensed, dual biography of Louis Daguerre (1787–1851) and Henry Talbot (1800–1877), the book is a clear and fascinating account of the history of photography from its earliest roots in the camera obscura—essentially a wooden box with a lens on one end and, at the other, a piece of ground glass on which to focus an image. From at least the sixteenth century, artists, including Leonardo, Velasquez, and Vermeer, had used the camera obscura to create templates for their paintings. From the eighteenth century on, not only artists but also scientists and entrepreneurs were in search of a method to use chemicals to permanently record the images projected through a camera obscura onto paper or another medium. The daguerreotype made use of a sensitized metal plate that produced only a single copy of an image, while Talbot's photogenic drawings of the 1830s, followed by his calotype of 1841, used sensitized paper; Talbot introduced the concept of the photographic negative, which could make one or more positive prints. Those who hope to find in this book an answer as to which man is “the true father of photography” will come away disappointed; about two-thirds of the way into the book, we read that the argument “over priority... is still not settled even today.” But readers in search of a lively, people-centered story of the birth of the technology will come away satisfied, whether they are practitioners of photography or not.

It is a credit to the authors, both of whom are British historians and one of whom (Watson) is curator of the Fox Talbot Museum in Lacock Abbey, Wiltshire (home to the Talbot family estate), that they do not let nationalistic loyalties intrude on their

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coverage of the two protagonists. Daguerre, apprenticed to an architect at age 13, left home in a small town 10 miles north of Paris at the age of 16 to study painting in the capital, where he eventually entered the entertainment business as a painter of panoramas. These enormous paintings presented a “cinematic” experience in shows that might be considered “the nineteenth-century precursors of the widescreen epic of today’s IMAX cinemas.” By the 1820s, Daguerre began to move “in the direction of science and invention,” as he searched for a way to permanently capture images from nature using a camera obscura. By the end of the decade, he entered into partnership with the older inventor Nicéphore Niépce, who is considered by some to be the true father of photography. After Niépce’s death in 1833, Daguerre continued to experiment with his process, but kept no notes on his methods. Watson and Rappaport lament the fact that, as a result, whatever we “know” about Daguerre’s experimentation is based on “posthumously published tales” containing “a mixture of truth and mythology,” requiring us to take them “with a degree of skepticism.”

Talbot, by contrast, was a child of privilege, educated at Harrow and Trinity College, Cambridge, born to the tradition of the gentleman amateur, in love with many branches of “natural philosophy,” who kept notebooks and diaries throughout his life. As a teenager boarding at Harrow, he, in partnership with a classmate, had already made use of the scientific approach to write “Plants indigenous to Harrow,” still available in the school library. (It is also worth mentioning that although the museum where Watson is curator is called “Fox Talbot,” the authors refer to him always as Henry Talbot.)

In Chapter Eleven, the authors compare their protagonists’ styles and stories: “Daguerre’s story is full of apocryphal tales of accidents and chance encounters, but Talbot... understood chemistry and was able to work in a methodical manner, with each experiment based on results gleaned from previous experiments.” What is a mystery, however, is why nowhere in his notebooks does Talbot mention his August 1835 invention of the first photographic negative, which would be “the foundation stone on which photographic innovation would stand for the next 160 years.” Nor did Talbot mention this milestone achievement the following summer, when he hosted an informal open house for luminaries about to attend the 1836 Bristol meeting of the British Association for the Advancement of Science. Totally unaware of the fact that Daguerre, with “the verve of the Gallic artist, full of energy and intensity,” was at work across the Channel on permanently capturing photographic images, Talbot seems to have given “no thought... either to historic significance or the potential value of his discovery.” Once Talbot learned, however, of the announcement of Daguerre’s work to the French Academy of Sciences in January 1839, he felt impelled to spend much of the rest of his life trying to establish his claim to priority. As Watson and Rappaport make clear, Talbot’s failure on a timely basis to stake that claim of his 1835 achievement “would dog him for the rest of his life, leaving him in the end often ridiculed and even despised by many of the photographers who later made their living from his pioneering work. Worse, even today Talbot’s failure to lay claim then and there to his invention, conveys the lingering—and erroneous—impression that he was photography’s second inventor—and never its first.”

There are many things to admire about *Capturing the Light* (which title, by the way, as we learn from the first of two epigraphs that precede the narrative, comes from a triumphant letter Daguerre wrote to the instrument maker through whom he learned about Nièpce's simultaneous but independent efforts to make permanent photographic images: "I have captured the light and arrested its light! The sun itself shall draw my pictures!"). Even though the book focuses on two men, the authors stress the "long, slow cumulative process of enquiry by a series of individuals" that led to the development of a technology "that dramatically change[d] our perception of the world around us." Always on the lookout for the forgotten women in the history of science, I was pleased to learn in Chapter Twelve, for example, of the work of Elizabeth Fulhame, wife of an Edinburgh physician, who in the 1790s carried out chemical experiments on dyeing fabric with metal salts, which she wrote up in her 1794 *Essay on Combustion with a view to a New Art of Dying [sic] and Painting*, establishing her claim as "one of the first scientists to describe photochemical imaging and the silver chemistry that would dominate photographic techniques for the next century or more."

As the wife of an astrophysicist, whose profession involves capturing light, I was particularly intrigued to learn about the numerous ways in which astronomy and astronomers figure into the stories of Talbot and, to a lesser but perhaps even more significant degree, of Daguerre. Talbot had been interested in astronomy from boyhood, and in 1808, at age eight, had met both William Herschel, discoverer in 1781 of the planet Uranus, and his sister Caroline, an astronomer in her own right and discoverer of several comets. Dispirited by his failure to attain Senior Wrangler status as he completed his mathematics studies at Cambridge, Talbot took up astronomy instead. (Senior Wrangler is the top mathematics undergraduate at Cambridge. Talbot came in 12th in his class, putting him in the not-too-shabby company of John Maynard Keynes.) In 1825, 3 years after he became a member of the fledgling Royal Astronomical Society, Talbot spent a month at the Paris Observatory with leading French astronomer François Arago. Imagine Talbot's disappointment 14 years later when Arago not only did not respond to Talbot's letter of January 29, 1839, staking "a formal claim of precedence, of the invention announced by M Daguerre in its two principal points" (namely, permanently fixing camera obscura images and preserving them from the ravages of direct sunlight), but also became Daguerre's main champion, conferring on his achievement the endorsement of the French Academy of Sciences. Talbot found greater support from astronomer John Herschel, son of William Herschel, whom he met in 1824. (John Herschel *had* attained the Senior Wrangler status in 1813 but nonetheless decided not to pursue pure mathematics but rather the family business of astronomy.) It was John Herschel who suggested to Talbot in September 1840 that he introduce an additional chemical, gallic acid, to his photographic process, thanks to which Talbot's negatives, "after fixing and washing, were much more stable than his earlier ones and less prone to fading." John Herschel also supported Talbot's decision to patent his calotype process, even though the photographic community heaped opprobrium on Talbot for pursuing the patents, with some critics even asserting that Talbot had "never originated any branch of inquiry." In summer 1851, Talbot—who at the age of 17 had figured out "complex mathematical

calculations to predict when the next lunar eclipse would happen”—took a break from the patent wars he was waging to observe a total solar eclipse from Marienburg, Prussia. The Royal Astronomical Society asked Talbot to make a series of photos of the event, but “he opted not to do so; even photography had to take second place to his now greater interest in astronomy.” Talbot did, however, write up “An Account of a Total Eclipse of the Sun” for *Memoirs of the Royal Astronomical Society*. (Incidentally, the first correctly exposed photograph of the solar corona, credited to a daguerrotypist named Berkowski, was taken at that eclipse.)

*Capturing the Light* engaged my interest to such a degree that I don’t want to dwell on the few, relatively small, issues I have with it, but I will indulge in pointing out what I will call not sins but rather peccadilloes, first two of omission and then two of commission. As a biographer of Marie Curie, I was disappointed not to find any mention in Chapter Twenty-Five, where the subject of color photography is discussed, of the work of Gabriel Lippmann, in whose lab Curie in 1894 did some preparatory experimental work toward her doctorate; Lippmann would eventually go on to win the Nobel Prize for Physics in 1908 (5 years after his student), for his work in producing the first color photographic plate. And for all the times John Herschel’s friendship with Talbot is mentioned, I was disappointed to find no mention in the book of a fact I learned in a 2013 exhibit at the Metropolitan Museum of Art of the work of the outstanding early photographer Julia Margaret Cameron: It was Herschel—who had met her in 1836 in Capetown, where she was recuperating from an illness and he was charting the skies of the southern hemisphere—who introduced Cameron to the invention of Henry Talbot and sent her the first photo she had ever seen.

In the commission department, I take issue with the authors’ concluding Chapter Eleven by comparing Talbot to Isaiah Berlin’s Hedgehog and Daguerre to his Fox: “the dogged and determined Talbot, with a regular income unrelated to his work; slowly persisting in his one big idea and in no rush to announce it to the world; while his rival, the mercurial quick-footed fox Daguerre, leapt from one enterprise to another; his living depending on his coming up with a new sensation to replace the diminishing commercial idea that had preceded it.” Calling Talbot a one-idea man just doesn’t ring true, especially since on the previous page the authors present him as having “the quicksilver mind of a typical Victorian polymath,” with “astonishing ability to leap coherently from one unrelated topic to another.” And it is confusing to read in Chapter Twenty-One that Talbot basically retired from photography in 1846, only to read in Chapter Twenty-Two of his technical breakthrough in 1851 in creating “the first truly instantaneous photograph,” and in Chapter Twenty-Five that after Talbot lost two patent infringement cases in 1854, he “was not discouraged from continuing to patent further inventions...in photographic engraving.”

But let me end on a more enthusiastic note. Rather than conclude their book with the deaths of the two protagonists, the authors continue to tell fascinating stories about the development of photography through our day. One story I particularly like highlights the contrast between the practicality of Talbot’s calotype over the more artistically appealing daguerrotype. When photography began to be used by

nineteenth century law enforcement agencies, a calotype was taken of the single daguerreotype portrait that could be found of a suspect; images made from the negative were circulated to police departments, ultimately leading to the apprehension of the suspect. I was also intrigued to learn that today, in the age of digital photography, there is an artistic movement to resurrect the old processes of both Daguerre and Talbot. Finally, very appropriately for a book on the history of a visual medium, the authors succeed in intriguing readers not only through words but also through their selection of 34 expressive illustrations, many of which underscore points they argue in their final chapters. Having seen several exhibits in 2013 of Civil War photographs, I was particularly drawn to the final photograph, taken at Gettysburg in 1863. I wholeheartedly recommend this book to readers of *Metascience*.