

The Curious Case of the Combination Print

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In recent decades the idea of “morphing,” merging one image with another, has become a staple visual effect in movies, television commercials, advertisements and digital fine art. The effect has become so ubiquitous that it already risks becoming a cliché. Yet the originator of the idea, who was acclaimed in his own time, is now forgotten by photographic history.

During the 1880s, one of the most regularly and enthusiastically discussed names in photography was Francis Galton. He is now forgotten; his name does not appear in any textbook on the history of the medium and, as far as I know, he has not been the subject of any article in a photographic magazine for the past 50 years.

Francis Galton’s considerable fame in late 19th-century photography was due to a single idea: the combination portrait. In essence, this technique involved making several exposures on one plate in order that the specific individual portraits blended into a generalized whole. There were two applications of this idea:

1. A criticism of photographic portraiture, in comparison with paintings, was that the relatively short exposure time produced one facial expression which might not be typical of the sitter. Galton wrote: *“The inferiority of photographs to the best works of artists, so far as resemblance is concerned, lies in their catching no more than a single expression. If many photographs of a person were taken at different times, perhaps even years apart, their composite would possess that in which a single photograph is deficient.”* ¹

2. By far the most common use of composite portraiture was the blending of different faces in order to produce one “type.” For example, Galton obtained photographs of violent criminals and by superimposing the images produced, he claimed, a representation “of the man who is liable to fall into crime.” Using the same combination technique, Galton produced the face of the typical Jew, the typical consumptive, the typical family likeness and so on.

These combination portraits were extremely popular throughout the 1880s and scores of articles were published in the photographic press, in England and the USA, which debated the validity of the results, suggested new applications (such as animal breeding), and offered various methods of conveniently and accurately aligning the individual portraits so that the final blend was as unobtrusive as possible.

Although the name of Francis Galton was invariably associated with combination portraiture, he was not its only exponent. Many individuals advocated its use and it is, therefore, curious that so few examples of this craze have survived, which perhaps indicates that its proponents did more talking about the idea than actually making combination portraits. Now and again the idea is resurrected and the result is a curiosity of photographic history.

In 1913, Lewis Hine produced a strange and compelling composite portrait² of child laborers in a cotton mill, which is an anomaly in the context of Hine's body of work. Equally as interesting is the combination portrait titled "The Inventor," produced nearly 50 years ago by D.A. Spencer, an employee of Kodak Ltd. Spencer took 13 portraits of the various individuals who contributed most to the development of photography,³ enlarged the images to make weak positive transparencies in which the distance between the eyes was the same, sandwiched them all together, back-illuminated the pack, and photographed the result,⁴ producing a generalized answer to the question "who invented photography?"

With the exception of these odd and isolated examples of the idea, combination portraiture was a phenomenon of the 1880s. Before we discuss Francis Galton's role in the introduction of the technique a source of possible confusion should be clarified. Combination portraiture has nothing to do with combination printing, a common and much more useful technique for the 19th-century photographers. Combination printing was the method by which photographers added clouds, to an otherwise blank sky area, from a separate negative; or the technique of creating a genre or allegorical scene from a number of different negatives (such as Oscar Rejlander's "Two Ways of Life," 1857). These separate negatives were printed onto different areas of the paper and only the edges of the individual images were merged to produce a "seamless" look. By contrast, the combination portrait stacked up images, one on top of another, in an overlapping confusion in order to destroy individuality and produce a general type.

In spite of the fact that Francis Galton was such a well known figure in photography, solely due to his introduction of the combination portrait, he was not primarily a photographer. Like so many of his Victorian contemporaries, Galton was a brilliant investigator in many fields, with a versatile and wide-ranging mind. He was born on 16 February 1822 and died on 17 January 1911, one month before his 89th birthday. Between these dates he packed enough work for half a dozen lesser men. Fortunately, he was born into a wealthy family (his grandfather was Erasmus Darwin, which made Galton a cousin to Charles Darwin).

Galton's early professional education (1838–39) was in medicine during which he performed systematic experiments with self-administered drugs taken in alphabetical order! From Kings College, London, he enrolled at Cambridge University (1840–43) where he studied mathematics and traveled. He explored Smyrna (1840), Egypt,

Khartoum, and Syria (1844–45), and tropical Africa (1850–52). These were not idle vacations but intense explorations of remote, dangerous and largely unknown areas of the world. In most biographical reference works Galton is labeled an anthropologist, and although this is true in the widest sense, he was also passionately interested in geography, ethnology and meteorology (he coined the word “anti cyclone”). From the mid-1860’s Galton’s work took a decided turn, influenced by a publication (1849) on the mathematics of probability by L.A.J. Quetet, Belgian astronomer and statistician, and his cousin’s *Origin of Species* (1859). Galton became devoted to the study of biological variations, heredity, statistical theory and practice, and the identification of individuals (he was one of the prime investigators of fingerprints). The main focus of all these diverse activities was their long-range application to the betterment of mental and physical qualities of the general population. For this study he coined the word eugenics.⁵

A list of Galton’s attainments would occupy all the available space. Even his mechanical inventions were numerous and included an electric telegraph system, a hand heliostat for transmitting light signals, underwater spectacles, and a whistle for testing the upper limit of pitch audibility. With this gifted combination of experience, training, theoretical knowledge and practical skills, Francis Galton was a fascinating example of a special breed of Victorian gentleman.

Galton was already a famous scientist when he first introduced the idea of combination portraits. During his Presidential address to the Anthropological Subsection of the British Association at Plymouth in August 1877 he mentioned that the typical characteristics of several people could be extracted by successive exposures on a single photographic plate. He specifically mentioned the idea of placing two different portraits into the stereoscope so that the two images merge into one when viewed into the instrument. It should be pointed out that this idea was not new. In fact it was a relatively common parlor amusement in the Victorian home – instead of stereoscopic pair, two single cartes-de-visite of different people would be viewed and the combination of mama and Queen Victoria, for example, gave endless amusement.

In a more serious vein, the stereo combination of dissimilar pairs was advocated by Herbert Spencer, a Mr. Appold, and A.L. Austin. Austin had written to Charles Darwin from New Zealand in 1877 suggesting that the stereo viewer idea would have anthropological and hereditary applications (“I think a stereoscopic view of one of the ape tribe and some low caste human face would make a very curious mixture.”).⁶

Of course the major problem of the stereoscope technique is that only two images could be combined at a time. Galton can be considered the inventor of combination portraiture because he took the idea out of the realm of the “merely amusing,” and advocated its use for the serious study in anthropology. He also made many time-consuming tests with a wide variety of portraits and techniques of super-imposition, in order that any number of portraits could be combined into one characteristic face.

The results of all these experiments were communicated in a paper, "Composite Portraits," read before the Anthropological Institute on 30 April 1878. The paper was reprinted in both *The Photographic News* and *The British Journal of Photography* over two issues⁷, and both journals enthusiastically endorsed Galton's ideas in their editorial columns. For the next ten years photographic periodicals would frequently publish features on composite portraiture; during these years Francis Galton was one of the most famous photographers in the world.

Even though so many articles appeared in print on the subject of combination portraiture they all add very little to the contents of the first paper of 1878. For example, there were various suggestions for more sophisticated methods of super-imposing the images. Initially Galton used a copy camera to expose the various portraits, one after another on the same plate, after using pin-hole register masks to ensure that the eyes of all the portraits were super-imposed. This worked perfectly well although Galton later photographed the original negatives by transmitted light. Eventually, in 1881, he had built a complicated piece of machinery specially for combination portraiture⁸ and introduced an even more complex system of super-imposition. The principle, however, remained the same.

Galton also had to amend his exposure calculations. At first, if he was photographing eight different portraits and the total exposure time was 80 seconds, he simply, and logically, gave ten seconds exposure to each portrait. Photographers, however, already knew that matters were not quite so simple. Portrait photographers were familiar with making several cartes-de-visite images on one plate, and knew that the first exposure required slightly more time than the following ones due to the emulsion's inertia.

More interesting than these technical considerations were the proposed applications of composite portraits. It has already been mentioned that one of Galton's first experiments involved murderers. These portraits were supplied by Sir Edmund DuCane, the Director-General of Prisons, and the final combination portrait was made, not by Galton, but by H. Reynolds. Reynolds seemed to specialize in such technical problems for other scientists – he was associated with Warren de la Rue in his astronomical investigations, with Francis Bedford in the photography of Yorkshire Abbeys, and with the London Stereoscopic Company in the recording of busts and friezes in the British Museum.

Galton also proposed that the combination portrait would provide typical pictures of various native races, such as Hindus. He suggested that a more accurate representation of an historical figure would be obtained by combining portraits of the individual taken from many sources, including paintings, sculptures, medals and coins. "It is perfectly easy," he said, "to apportion different 'weights' to the different components. Thus if one statue be judged to be so much more worth of reliance than

another that it ought to receive double consideration in the composite, all that is necessary is to double . . . the time of its exposure.”

He felt that the technique would be an important research tool in the hereditary transmission of features, and would aid the breeders of animals “to judge the results of any proposed union.” In the same way composite portraits of a man and woman could forecast the appearance of any offspring.

Galton believed composite portraits would be valuable in producing a standard “physiognomy of disease,” and as an illustration of the idea photographed a number of consumptive patients to produce a typical portrait of the consumptive. Another series of portraits produced the typical military man, from blending the images of 12 officers of the Royal Engineers.

By 1885, Francis Galton was the President of the Anthropological Institute and one of the first papers delivered under his auspices was on the racial characteristics of the Jews. This was an ideal opportunity for Galton to illustrate the paper with his own composite portraits. Galton made individual photographs of Jewish boys at a school in London. They were “dirty little fellows individually, but wonderfully beautiful, as I think, in these composites,” said Galton.⁹

This remark is an interesting one because right from the beginnings of composite portraiture it was remarked that the final image was always more beautiful than any of the component faces. The result was often referred to as the “idealized” portrait. Perhaps it was natural, then, that the technique would be used to photograph “the typical young women of culture, the ideal of many poets, the study of modern novelists.” In 1885, eleven girls in the senior class in physics at Smith College were photographed by the Galton method. The result seems to have been successful.

The mystery of the camera is undeniably beautiful. With high brow softened by fluffy waves of hair, deep-eyed, with refined features and earnest expression, she is a young woman of dignity and sweetness. She is born for deep thought, and yet for sympathetic comfort and cheer. . . .¹⁰

The class named the result Miss Senior P. Smith and placed her portrait in the class album. This photograph became the archetype of the idealized portrait and its genesis (as well as its beauty) was retold for many years.

The Galton technique of combination portraiture was popular in America. In 1885 – which was the peak year for interest in the subject – the American Academy of Sciences experimented with the idea, combining the features of 31 of the society’s members to produce “the ideal intellectual man of the Caucasian type.” It also combined 16 naturalists and then 12 mathematicians with the conclusion that “the mathematicians had a broader, and the naturalists a slightly narrower, forehead than the average of

mankind.”¹¹ Walter R. Furness, of Philadelphia, produced in the same year a combination portrait of William Shakespeare which was claimed to be “the first in the world . . . to use composite photography analytically, for the creation of a reliable historic likeness.”¹² It was not the last. Within a few months photographers had produced combination portraits of George Washington, Alexander the Great and Julius Caesar. “It is now proposed,” said one magazine, “to get a clear idea of Nebuchadnezzar from the various stone and brick slabs upon which his face is graven.”¹³ Curiously, there is no record, as far as I have been able to determine, of any photographer using the technique to produce a composite portrait of Jesus, undoubtedly the most often imagined face in history. Perhaps the subject would have been considered in poor taste.

A novel application of Galton’s composite technique was used by Dr. Persifor Frazer in a Philadelphia court in 1886. Instead of combining portraits he made composite pictures of signatures on checks and discovered that in those that had been forged, several letters “stood out” from the rest. The judge was convinced, and he “regarded [Galton’s] discovery as a very important one in connection with the identity of handwriting.”¹⁴

In France, the Galton technique was also very popular and examples of combination portraiture were displayed at the International Exhibition of 1889–90¹⁵ and seriously discussed in *La Nature*. Both the French and American methods, however, differed from the English technique. British photographers tended to produce their composites from separate negatives, successively printed onto the same sheet of paper. The French and Americans seemed to have preferred multiple exposures in the camera.

Although Francis Galton wrote occasional pieces about combination portraiture after 1885, the thrust of his own researches had taken a different direction. He was now involved in the problems of personal identification and collecting anthropometric data. This study led him into the area of fingerprint identification, beginning in 1888, which would result in at least 16 scholarly articles and a classic book, published in 1892.¹⁶

During these years, Galton was not a stranger to photography. He often made references to the value of portraiture, and to fingerprint photography, in his studies on the problems of identification of the individual. Also, in 1887, he wrote a long letter to *The Photographic News*¹⁷ outlining his experiments in photographic silhouettes and advocating lithographic copies as a cheap and convenient form of portraiture. He also made many experiments in photographing horses¹⁸ in order that exact measurements could be taken from the prints, an extension of Galton’s interest in anthropometrical studies.

Francis Galton’s involvement in photography was not prompted by any aesthetic impulse; his use of the medium was strictly scientific in nature. Yet many of his attitudes and ideas were influential among art photographers. An example was the chapter on

“Mental Imagery” in his book *Inquiry Into Human Faculty*. H.P. Robinson devoted an interesting article to Galton’s chapter in an 1890 Almanac. ¹⁹

Galton’s chapter, said Robinson: “should be read by every photographer, not only for its interest, but for its real use to them in their art, for it will show them how it is possible to cultivate the faculty of visual memory, by the aid of which they may at any time call up before their mental vision scenes they have seen, and may lead to the higher faculty of embodying in their mind’s eye subjects they may imagine before they arrange and photograph them.”

Francis Galton deserves a special place in the history of photography; he was one of those uniquely interesting tributaries to the mainstream which fed the progress of photography with fresh ideas and impetus. The medium would be a lot less interesting without him and his type.

References

1. The Photographic News, 31 May 1878, p. 258
2. This combination portrait was recently used on a publicity announcement for an exhibition of Hine’s work at the Visual Studies Workshop, Rochester, N. Y.
3. The thirteen individuals blended into one portrait were: Niepce, Talbot, Daguerre, Reade, Herschel, Petzval, de St. Victor, Archer, Swan, Maddox, Vogel, Eastman, Driffield
4. The combination portrait, “The Inventor,” by D.A. Spencer, was published in *Image*, Vol. 1., No. 4, April 1952, front cover
5. For those who are interested, Galton’s still very readable books on the subject include: *Hereditary Genius* (1869) and *Inquiries into Human Faculty* (1883), which contains a chapter on combination portraiture. Galton founded a eugenics laboratory in 1904; founded a chair of eugenics at London University; and initiated the quarterly journal *Biometrika* in 1901
6. Letter to Charles Darwin, from A. L. Austin, Ivercargill, New Zealand, 6 November 1877
7. 31 May and 7 June 1878
8. Illustrated in *The Photographic News*, 8 July 1881, p. 317
9. *The Photographic News*, 17 April 1885, p. 243. This article is illustrated with two pages of images of “the Jewish type.” Joseph Jacobs, who delivered the paper to the Anthropological Institute, wrote an article, “The Jewish Type, and Galton’s Composite Photographs,” for the same magazine, 24 April 1885, pp. 268–269
10. *The Photographic News*, 7 August 1885, p. 512. The story was often reprinted: *Chicago Tribune*, July 1886 and the *Century*, March 1887
11. *The Photographic News*, 27 March 1885, p. 200
12. A communication to the Franklin Institute, reported in *The British Journal of Photography*, 14 August 1885
13. *The Amateur Photographer*, 12 March 1886, p. 122

14. The Photographic News, 2 April 1886, pp. 223-224
15. The Photographic News, 21 March 1890, p. 222
16. Finger Prints, London, 1892. Reprinted by DaCapo Press, New York, 1965
17. The Photographic News, 8 July 1887, pp. 429-430; 22 July 1887, p. 462
18. Nature, January 1898; The British Journal of Photography, 14 January 1898, p. 20
19. The British Journal Photographic Almanac, 1890, pp. 386-387