

# Ghostly Spirits: Three Cases of Experimentation on Life and Death in Late-19th-Century Science.

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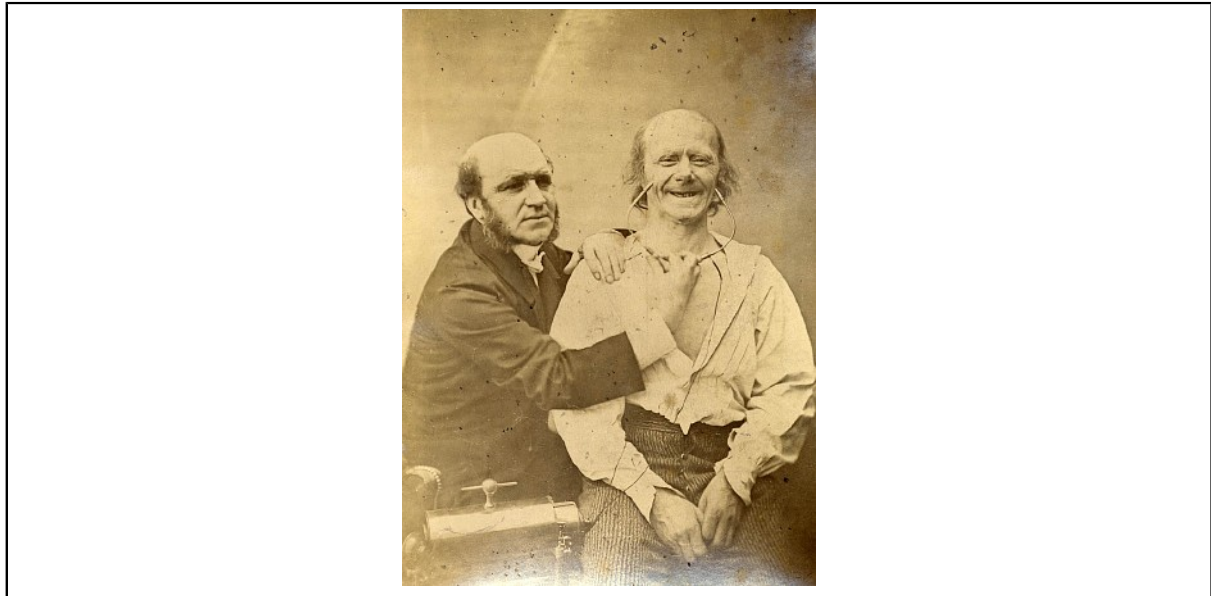
The notions *ghost* and *spirit* are often described as equivalents. The *Oxford English Dictionary* describes "ghost" as, among other things, "the spirit, or immaterial part of man, as distinct from the body or material part; the seat of feeling, thought, and moral action." "To ghost" and "to haunt" also have similar meanings, related to the dead disturbing someone still alive in an uncanny way.

From daguerreotypes to Talbot's negative photography

The production of a photographic negative can be described as the transformation of strong light into weak effects and vice versa. An unexpected and new mode of objects could be made visible with the help of this new technique, not only in terms of freezing quick movements — in the way, for example, that Muybridge used photography for his motion studies — but also in terms of producing a new, negative reality. The discourse surrounding developments in photography can be seen as analogous to the 19th-century discourse on electricity, starting with the invention of alternating current and the inductor by Michael Faraday at the beginning of the century. Here negative and positive charges induce each other similarly to the photographic negative constituting its reverse – the photographic positive. The following three closely related examples elucidate the historical conjuncture between the notions of negative and positive and the different roles they play within photographic and electrically based practices surrounding the human body and its otherworldly "doppelgänger".

## Duchenne de Boulogne's vivid dead bodies

The difference between galvanic and alternating current in terms of physiological stimuli is that alternating current makes it possible to freeze a body in poses, even if it is dead, whereas galvanic current only makes bodies quiver. Duchenne de Boulogne, who worked at the Salpêtrière in the 1850s and 1860s and who may be described as one of the most important forerunners of Jean-Martin Charcot and his studies of hysterical women, combined both alternating current and photography in his physiological experiments. By experimentalizing life through the dead body, Duchenne was able to study the path of nerves—research not possible with vivisection. This was an important step in the study of physiology, similar to the way that X-rays made it possible to see bones without the destruction of the body's outer surface.



reproduced from: G.-B. Duchenne (de Boulogne), *Mecanisme de la Physionomie Humaine*. Atlas. Deuxieme edition. J.-B. Bailliere et Fils, 1876, p. 1

The ability to freeze bodies in poses using electricity also improved the photography of them. Electrically induced transformations freeze the body in a way similar to photography; the manipulation of the body is analogous to the manipulation of a photographic negative in the dark room. Therefore Duchenne de Bologne's experiments can be described as the realization par excellence of the close connection between photographic and electrophysiological discourse during the second half of the nineteenth century. Duchenne was able to produce facial expressions by changing the currents that he induced in the experimental object. He could create emotional expressions by evoking two or more facial expressions at the same time which usually corresponded to different emotions and thereby produced disconcerting photographic portraits of incomprehensible mimicked expressions.

Sir Francis Galton's way of visualizing the vivid and the dead in one image

"It was while endeavoring to elicit principal criminal types by methods of optical superimposition of the portraits, such as I had frequently employed with maps and meteorological traces, that the idea of composite figures first occurred to me" (quoted in Pearson, vol. II, p. 284.) Galton's hypothesis was that the outer appearance of a human corresponded to his mental abilities. His first article on composite pictures was published in 1878 when he gave a talk on them before the Anthropological Institute. Later, in 1883, various papers on composites and other topics were put together in Galton's next important publication, *Inquiries into human faculty and its development*.

Heredity and its effects were constant topics in Galton's writings from 1865, when he wrote his first article on the subject, onward. Galton had read his cousin's book *On the Origin of Species* with great interest and fascination, and Galton's most famous book *Hereditary Genius*, from 1869, can be described as his reaction to Charles Darwin's ideas. Heredity in its different forms led Galton to the study of "eugenics," a word he coined in 1883 to describe the distribution of positive characteristics. Galton not only developed theories, but he also wanted to find ways to realize his own Utopia. To put it plainly, he envisioned a world in which geniuses could be bred, and the middle class exists, but criminals and other deviant people are abolished.

It was in this context that Galton invented composite portraiture; not only was it supposed to allow the pictorialization of an *homme moyen* or type (Quetelet) of criminal and other deviant, but it could also be used to produce composites of races or a family in order to reconstruct each clan visually and thereby also envision its future.

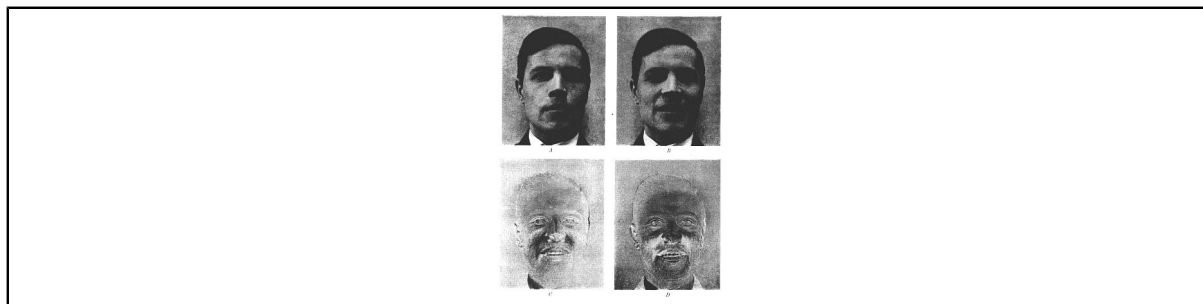
Composite photographs are produced by superimposing negatives; they result in one photograph that shows superimposed, or as Galton says, generalized faces. Galton points out that the shapes of the different heads have to be similar and the eyes have to be blended exactly; nonetheless this procedure always produces inaccuracies. "The effect of composite portraiture is to bring into evidence all the traits in which there is agreement, and to leave but a *ghost* of a trace of individual peculiarities" (Inquiries, emphasis added).



reproduced from: Karl Pearson, *Life, Letters and Labours of Francis Galton*, vol. II, p. 295

The generalized faces have ghostly qualities for two reasons; the first is due to the inaccuracy of their outlines, the second is due to their function. Composites are both the representation of past generations blended over one another and the visualization of a future type. Just like apparitions, the composites are materializations of dead ancestors and speak to the living from another world that can be situated in any time, but they themselves and their world, are, by definition, absent; the visual noise they produce is spaceless and timeless. It is ghostly.

In 1880, Francis Galton started to experiment with a different type of photograph, namely "transformers" that were supposed to visualize nothing but the differences between two objects. Experiments with faces showed results as disconcerting as Duchenne's manipulations of ambiguous mimicked expressions. Galton, however, was not interested in the path of the nerves, but was fascinated by changing a person's facial expression by manipulating a photograph. In 1900, he wrote: "I photographed two faces, each in two expressions, the one glum and the other smiling: I could turn the glum face into the smiling one, or *vice versa*, by means of the suitable transformer; but the transformers were ghastly to look at, and did not at all give the impression of a detached smile or of a detached glumness" (quoted in Pearson, vol. II, p. 311).



reproduced from: Karl Pearson, Life and Letters of Francis Galton, vol. II, p. 312

These transformers, which were supposed to visually portray "the differences between types (or races), between individuals (...), or between an individual on different occasions" (Pearson, vol. II, p. 311), are in fact superimpositions of a positive and a negative of, for example, two different facial expressions of the same person. As in Duchenne's work, emotions and their physical expression were at the center of this photographic research. "From the psychological standpoint it ought to be of first class value in the study of the expression of the emotions. It should indicate what physical muscular changes accompany such expressions" (Pearson, vol. II, p. 316). By mapping the human body and especially by measuring the head and with the use of so - called analytical photography, Galton, like Duchenne, produced ghostly grimaces that can easily be imagined as the protagonists of a haunting or ghostly nightmare or spiritistic séance.

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## Spirit photography: photochemical traces from another world

1872, Spiritualist 15, April 25/1: *"Within the last six weeks in London, spirit photography has set in like a flood."*

When Sir Francis Galton started to take composite photographs in the 1870s and compared their blurriness to ghostliness, composite photographs and transformers had a lot in common with the spirit photography of the same period. In 1861 in Boston, William Mumler, without knowing much about the photomechanical process, had taken some photographs of himself in a friend's laboratory and then developed them in the dark room. The results were astonishing! In each of his portraits another person appeared behind him, a negative one, white and ephemeral, but sharp. A spirit? Or just a badly aligned attempt to produce a Galtonian transformer?



reproduced from: Rolf H. Krauss, *Jenseits von Licht und Schatten*, p. 102

Already in 1869, a critic mocked: "On the outskirts of the ever-widening circle lighted up by science there is always a border-land wherein superstition holds sway. The arts and sciences may drive away the vulgar hob-goblin of darker days; but they bring with them new sources of illusion. The ghosts of old could only gibber; the spirits of our day can read and write, and play diverse instruments, and quote Shakespeare and Milton. It is not, therefore altogether surprising to learn that they can take photographs also." In 1848, modern spiritism was born in Hydesville, New York in the house of the Fox family, when spirits began sending their messages through Morse signals and acoustic media. Spirits first became visible in Boston 13 years later. With Mumler's photographs, spirit photography was initiated and soon spread to Europe where it would play an important role within the debates on so-called scientific spiritualism. Of course electricity also played a crucial role in the context of spiritistic discourse as well as in its practice. Séances took place in which — as in Mesmer's time — all the people present had to build one electrical chain in order to produce the right ethereal atmosphere for the spirits to appear.

Furthermore, spiritistic mediums and their sensitivity were not merely considered in terms of their affinity towards extraordinarily charged oscillations. They were also the predecessors of Duchenne's experiments with hysterical women, said to be the most sensitive mediums, who performed the strangest gestures and mimicked expressions without anyone inducing electricity in them — a hypnotizing look or touch was enough to make them quiver. These women produced their own electricity and their bodies froze in the most extraordinary spiritistic poses. The photographs of their carefully choreographed figures still haunt us today.

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