

Duchenne: Discourses of Aesthetics, Sexuality, and Power in Nineteenth-Century Medical Photography

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The work of Dr. Guillaume-Benjamin Duchenne de Boulogne (Figure 1) represents a unique convergence of discourses in nineteenth-century European visual culture. Duchenne, a French physiologist and psychiatrist, conducted a series of experiments during the years 1852-6, which he termed “electrophysiology.” In electrophysiology, Duchenne, with an assistant, attached electrodes to various facial muscles of his subjects. Then, they administered electric shocks of varying degrees of intensity so that the targeted muscle would involuntarily contract. Duchenne had the photographs taken at the moment when the subject’s face contorted in reaction to the electric shock. For most of these pictures, Duchenne employed photographer Adrien Tournachon, who was the brother of Felix Nadar, one of the most well known early practitioners of photography in nineteenth-century France.

Importantly, Duchenne’s subjects were patients at the Salpêtrière mental hospital in Paris, where Duchenne was employed. This was the same hospital at which Géricault had executed his now famous series of mental patients some thirty years earlier.¹ Géricault’s paintings were commissioned by the hospital in 1822-3 and were used as visual documentation in classifying “types” of insanity such as compulsive envy and megalomania. The facial features and expressions of each subject in the paintings were thought to reveal their internal mental states.² As we shall see, these paintings are technological forerunners to Duchenne’s series of photographs, which also purport to link internal states with external appearances.

This study will critically examine the verbal and visual discourses in which Duchenne engaged. His book on the experiments, *The Mechanism of Human Facial Expression*, published in 1862, is a primary source of information. I will investigate some ways in which Duchenne legitimized his experiments for the contemporary French scientific community. Such strategies were necessary for Duchenne, because his experiments provoked very mixed critical responses in scientific

circles of the day. These strategies include the appeal to a faith in the veracity of the photographic image, classical aesthetic theory, a rigorous scientific empiricism, and even theology.

In order to understand the logic of Duchenne’s photographic “proof” in his experiment, we must first examine the dominant notions of visuality which informed his aesthetic and scientific philosophies at the time he was working. Barbara Stafford notes that modern visuality was established in the curiosity cabinets of the seventeenth and eighteenth centuries. These encyclopedic institutions, with their myriad of eclectic natural paraphernalia, first made what she terms the “voracious gaze” of the modern European eye prominent. Through this system, it was believed one could know nature by simply having visual access to it.³ This aesthetic principle of visuality can be seen in Duchenne’s method of research and proof. He displays a “voracity of vision” by transversing both disciplinary and historical boundaries in the quest for empirical validation. However, his rigorous categorization of facial expressions shows that his vision is clearly tempered by Enlightenment principles of classification and thus his experiments have an authority bestowed by Enlightenment-based intellectual rigor, a characteristic lacking in pre-Enlightenment displays of nature.

Also important in understanding Duchenne is realizing his connection to artistic debates occurring contemporaneously. Andre Jammes notes that in France during the early and mid-nineteenth century, artists debated whether beauty could be found in the stillness of the human form or in the motion of the human form. Jammes characterizes this debate in terms of a neoclassical emphasis on stillness, seen in the work of Cabanal and Puvis as opposed to an emphasis on motion supported by Realists and Romanticists including Courbet.⁴ It is in Duchenne’s belief that the motion of the human face conveys truth that we can thus see the romantic underpinnings of his brand of scientific research.⁵

¹ Martin Kemp, “A Perfect and Faithful Record: Mind and Body in Medical Photography before 1900,” *Beauty of Another Order*, ed. Ann Thomas (New Haven & London: Yale UP, 1997) 134-6.

² Kemp 136.

³ Barbara Stafford, *Body Criticism: Imaging the Unseen in Enlightenment Art and Medicine* (Cambridge: MIT Press, 1991) 224-5.

⁴ Andre Jammes, “Duchenne de Boulogne, La Grimace Provoquée et Nadar,” *Gazette des Beaux-Arts* 6.17 (1978): 215.

⁵ See also Hugh C. Marles, “Duchenne de Boulogne: Le Mechanisme de la Physionomie Humaine,” *History of Photography* 16.4 (1992): 396. Marles makes a similar argument for Duchenne’s “romanticism.” Marles points out that Nadar, brother of Duchenne’s photographer Tournachon, argued that photography had the ability to represent the character of a sitter as well as painting could. Thus, we can further see the philosophical interconnections between Duchenne’s scientific research and Nadar’s aesthetic practices in photography.

The central thesis of Duchenne's book was that all human facial expressions resulted from the action of one specific facial muscle or group of muscles.⁶ In the introduction to his book, he further argues that this muscular activity is the result of the stirrings of the "spirit." These stirrings result in our emotions. Thus, Duchenne establishes a causal chain that links metaphysics, emotions, and muscular activity. He lends authority to this chain by quoting from the Comte de Buffon's influential book on natural history, *Histoire de l'homme*, in which Buffon similarly argues for the necessary linkage between human emotion and resultant facial expressions. Duchenne then claims that the electric shocks he administers to his "patients" are necessary because they uncover the laws governing human facial expression. In this sense, Duchenne asserts, he makes the spirit "speak" through his experiments.⁷ Duchenne here shows his desire to expose nature through visual means, a technique characteristic of the modern emphasis on visuality.

However, Duchenne exceeded most scientists of his day by his extensive and overt use of metaphysical arguments in the validation of his work. For example, Duchenne sounds decidedly metaphysical when later, in a section of his book entitled "The purpose of my research," he argues that we understand our passions by the "transfiguration of the soul" and that this transfiguration in turn dictates our muscular movements. Further, he maintains that *all* races have the same facial expressions for particular emotions. This is made so by the "Creator" enabling us to recognize each other's emotional states.⁸ Duchenne thus views his experiment as the simple illustration of *a priori* natural conditions determined by a "Creator."

A more disturbing aspect of Duchenne's experiment is seen in the section of his book entitled "Scientific Section." In this section, Duchenne introduces his photographic documentation to the reader. Duchenne praises this technology, speaking of the photograph as a "perfect mirror" of reality.⁹ Here, Duchenne echoes a sentiment widely shared regarding photography in the mid-nineteenth century. The notion of photography as being of absolute verisimilitude was shared by thinkers as diverse as Nadar, Henry Fox Talbot, an early British photographer, as well as Baudelaire and Delacroix, the primary exponents of Romanticism in France.

For the majority of the photographs taken for the "Scientific Section" of the experiment, Duchenne used an elderly male patient at the hospital (Figure 2). It is in the photographs of this patient that Duchenne argues for a link between the aesthetics of his experiment and those of several canonical artists of prior centuries. For example, of this photograph (Figure 3), Duchenne states that his use of heavy lighting is analo-

gous to Rembrandt's style of lighting. It is thus, with such aesthetic authority deployed, that Duchenne validates the truth in his images.

The allusion to canonical artists and works of art is a central part of Duchenne's argument for the scientific validation of his experiment. He also likens some of his images to the style of other famous Baroque painters including Caravaggio and Jusepe de Ribera.¹⁰ He claims that slightly differing lighting effects allow for more "truth and clarity" in the representation of particular types of emotional expression.¹¹

Duchenne further likens his work to Greek sculpture. Referring specifically to the *Laocoön* (Figure 4), Duchenne applauds the artistry of this work for passionate rendering of somber emotions. This, Duchenne says, can be attributed to the manipulation of both the muscle controlling the eyebrow and the *frontalis* muscle which controls the furrows of the forehead. He refers to Winckelmann, the neoclassical theorist who praised the piece as an authentic representation of somber emotions. Duchenne then asserts that his own experiments rendered facial movement similar to that seen on the face of the central figure in *Laocoön*. However, Duchenne points out that his experiment has not only scientific but aesthetic worth because he "corrects" the mistake of the furrows on the forehead of *Laocoön* which are too long for this particular emotional state. He "proves" this mistake by comparing the *Laocoön* with his electrophysiological sample (Figure 5). Here, in an emotional expression induced by shock supposedly similar to that of *Laocoön*, the forehead furrows are much shorter than those seen in *Laocoön*. Duchenne argues that his induced expression is more correct because of his use of photographic documentation providing a more systematic observation of nature.¹² Here, Duchenne attempts to establish himself as not only a superior scientist but a superior artist *vis à vis* Greek sculpture.

Duchenne's manipulations of the patients involved in his experiments becomes most graphic in the section of his book titled, "Aesthetic Section." Here, Duchenne sought to present photographs that are more aesthetic than scientific in appearance. In fact, Duchenne felt that he had mastered the mechanics of photography well enough that he could take the pictures himself. It is not surprising that it is this section in which Duchenne's photographs take on their most bizarre and intricate narratives. With artistic pretensions in mind, Duchenne states that the elderly man from the first section is too "common" a character to be represented in the aesthetic section of the book. Duchenne selected a female patient for this section (Figure 6). Duchenne's assumptions concerning gender become more apparent when his gaze is fixed on a female rather than a male subject. For example, he refers to her as "average

⁶ Marles 395.

⁷ Guillaume-Benjamin Duchenne, *The Mechanism of Human Facial Expression*, trans. R. Andrew Cuthbertson (Cambridge: Cambridge UP, 1990) 1.

⁸ Duchenne 29-30.

⁹ Duchenne 39-40.

¹⁰ Duchenne 40.

¹¹ Duchenne 39-40.

¹² Duchenne 98.

looking” writing that she “lacks expressivity in the face.” Duchenne again justifies his use of her by claiming that his electric shocks make her features more alive and attractive than they are at rest.¹³ Duchenne’s argument for the “improving” effects of the electric shocks was one not uncommon in nineteenth century French psychiatric practice. Jeffrey Masson points out that misogynistic practices were often veiled by the notion of “beneficial treatments” for women. These “treatments” even exceeded Duchenne’s in their violence, sometimes including genital mutilation. Additionally, the scholarship published in conjunction with these “treatments” was read exclusively by male doctors and thus no female voice of resistance was allowed into the discourse.¹⁴ He goes on to say of her that she is “well built and suitable for the external study of the shape of the body.” Despite this, he says, she is not intelligent enough to understand the various poses and gestures which he asks of her and thus she needs to be treated like a mannequin.¹⁵ These statements, coupled with the stereotyped female roles in which Duchenne poses this woman, clearly reveal a voyeurism that is thinly veiled by his scientific and aesthetic pretensions.

Alan Sekula identifies cultural functions of photography in his article “The Body and the Archive.” He argues that photography was a perfect medium for the reinforcement of social hierarchies in the nineteenth century because it was popularly perceived as being flawless in its verisimilitude. As was discussed earlier, this attitude was shared by Duchenne. As a medium of undeniable truthfulness, things represented in photographs were assumed to be true to life. Photography at once allowed for the elevation or repression of its subject, depending on how that subject was photographed. Thus, wealthy patrons could have their socio-cultural status enhanced by being photographed in luxurious surroundings. Likewise, those whose behaviors or attributes were frowned upon by the culture as being “insane” or “criminal” could be effectively marginalized by appearing in police or medical photographs—signs of lower social status.¹⁶ Here, this woman’s status in clearly lowered. This is so due to the fact that Duchenne was able to utilize his professional position in order to have this woman pose in a variety of puppet-like situations.

The variety of identities to which Duchenne subjects this woman run the gamut of nineteenth-century female stereotypes, including *femme fatale*, coquette, hysteric, and pious nun/virgin. For instance, one image shows the woman in a pose simulating the emotional reaction of a hysterical mother (Figure 7). Thus, the contemporary viewer, undoubtedly male, could view these images as positive. They reinforce the existing social order both by depicting normative constructions of

“womanhood” and the assumed doctor-patient power relationship.

Duchenne’s photo titled “nun saying her prayers” illustrates this point (Figure 8).¹⁷ In this image, Duchenne includes himself in a scientific role applying the electric shocks to the upper left corner of the woman’s face. Duchenne adds to the illusion of piety by posing the woman in a conventional prayer-like stance and adorns her with a white veil. This image takes on a bizarre historical irony. The scientist and his electric mechanisms rather than religious fervor produce a synthetic image of traditional St. Theresa-like piety in the subject. This is a graphic illustration of Duchenne’s belief in the merging of modern science and religiosity.

In this image of the woman undressing (Figure 9), Duchenne reinforces the dominance of the male gaze in nineteenth century scientific and sexual discourse, as his description reveals:

I wanted to show a little comedy, a scene of coquetry, a gentlemen surprises a young lady while she is dressing. On seeing him, her stance and her look become disapproving. Nevertheless, we note her nudity, which instead of covering she seems to reveal with a certain affectation. . . The young man was becoming more audacious, but the words ‘Get Out!’ pronounced in a scornful way by the girl, stops him in his enterprise.¹⁸

In this passage, Duchenne constructs a veritable sexual fantasy. The female patient, whose expression is synthetic to begin with, becomes an unwitting player in Duchenne’s sexualizing narrative. In disregarding her personal will, Duchenne insinuates that this woman enjoys being objectified by a male gaze.

In this image of the female patient (Figure 10), Duchenne constructs his most elaborate fantasy. He poses the patient, with dagger in hand, as Lady Macbeth. Duchenne argues that she is an appropriate model for this character, because her muscle of aggression, the *m. procerus*, which he shocks here, was already well developed. In fact, he states that her facial features remind him of “the features of women in history who were renowned for their cruelty.”¹⁹ With this statement Duchenne evokes the pseudo-sciences of phrenology and physiognomy in which he was well versed. Duchenne’s experiments, like the pseudo-sciences, seek to reveal the internal states of a person, thought to be evident in external facial features. In this sense, Duchenne’s brand of science, as many others in the nineteenth century, can be seen as metaphysical rather than empirical in its philosophical underpinnings.²⁰

¹³ Duchenne 105.

¹⁴ Jeffrey M. Masson, *A Dark Science: Women, Sexuality, and Psychiatry in the Nineteenth Century* (New York: Farrar, Straus, and Giroux, 1986) 7. See also the introduction of the volume by Catherine A. MacKinnon.

¹⁵ Duchenne 105.

¹⁶ Alan Sekula, “The Body and the Archive” *October* 39 (1986): 6.

¹⁷ Duchenne 104.

¹⁸ Duchenne 111-2.

¹⁹ Duchenne 120.

²⁰ See Stafford 30-3, 84.

With this in mind, it is interesting to note the reception of Duchenne's book when it was published in 1862. Although reaction to his work was mixed, it was nonetheless very well known. It was praised in the *Journal des Débats*, a French academic journal of the day. The reviewer of this publication praised Duchenne's book for reviving an interest in facial expression. He claimed that the book was important and highly sought after by both physiologists and artists for its useful illustrations.²¹

In scientific circles, the most famous advocate and critic of Duchenne's work was his friend Charles Darwin. Darwin actually used some of Duchenne's photographs to illustrate his 1872 book *The Expression of Emotions in Man and Animals*. While Darwin and Duchenne were colleagues in the sense that they were mutually cooperative in sharing data,²² Darwin nonetheless objected to many of Duchenne's claims. First, Darwin argued that Duchenne failed to adequately explain why exactly individual muscles responded to particular emotional states in specific ways. This objection was largely based on Darwin's contention that facial muscles act systematically in groups, and not individually. For Darwin, Duchenne's findings were inaccurate because the electric shocks elicited reactions from only single muscles.²³ Second, Darwin objected to Duchenne's specific focus on human subjects. The former's text argued that the muscular movements of all organisms, and not only those of humans, could be attributed to similar evolutionary origins. Duchenne's exclusive focus on human subjects was too narrowly based for Darwin's liking, as was Duchenne's insistence that human facial expression could be linked metaphysically to a "Creator" rather than to evolutionary processes.²⁴ Finally Darwin conducted an informal counter-experiment which he claimed disproved Duchenne's central thesis which held that particular facial expressions could be linked to specific emotional states. Darwin tells his reader that he showed several of Duchenne's images to "educated persons" without the aid of textual captions. Every person, he claims, had considerable difficulty in recognizing specific emotional states in many of the images. Thus, Duchenne's seemingly facile assignment of meaning to various images was largely subjective. The truth of his claims rested more in his complex text-image juxtapositions than in *a priori* correlations.²⁵

Pierre Gratiolet, another scientist who studied facial expressions, offered the most devastating criticisms of

Duchenne's entire project. Gratiolet questioned the very relevance of Duchenne's experiments. He argued that they were irrelevant because the movements seen on the faces of Duchenne's patients were caused by artificial means. As such, his work violated the most important principle of physiognomy: that the features and expressions on one's face come from interior stimuli, not exterior stimuli. Thus, Duchenne's findings were invalid because they told nothing of the actual expression of emotion, rather, they were only electrically produced simulations. Gratiolet objected to these artificial means of stimulation because his approach focused on internal neurological processes, which he believed to be the underlying cause of facial and bodily movement.²⁶

To conclude, Duchenne's faith in photographic similitude was common in nineteenth-century French scientific classificatory and archival systems. However, it also demonstrates that when combined with photography, both metaphysics and popular aesthetic theory could be used effectively in reinforcing existing social hierarchies, such as those between men and women and between the medical institution and its subjects.

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Figure 1. Adrien Tournachon, untitled photographic print, 1852-6. L'École Nationale Supérieure des Beaux Arts, courtesy of Cambridge University Press.

²¹ Cited in Jammes 218.

²² Darwin actually praised the systematic nature of Duchenne's experiments in his text. See *The Expression of Emotions in Man and Animals* (Chicago: U of Chicago P, 1965) 5.

²³ Darwin 5.

²⁴ Darwin 11.

²⁵ Darwin 13-14.

²⁶ Pierre Gratiolet, *De la physionomie et des mouvements d'expression* (Paris, 1873) 1-33.

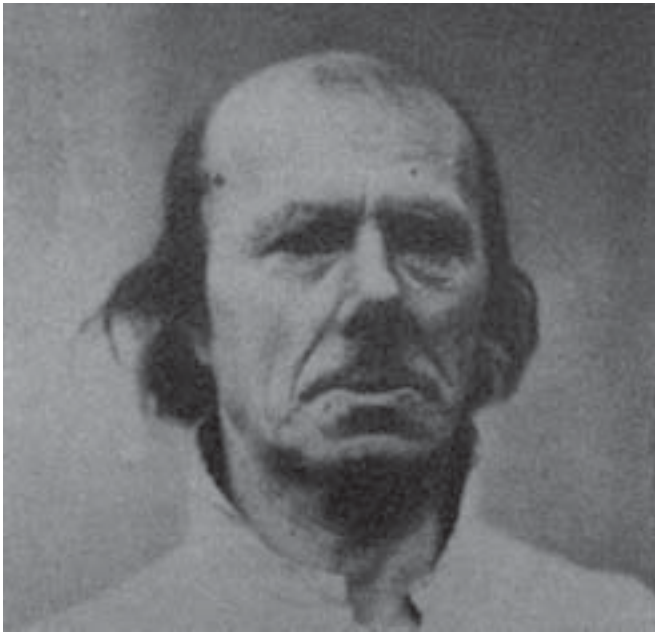


Figure 2. Adrien Tournachon, untitled photographic print, 1852-6, L'École Nationale Supérieure des Beaux Arts, courtesy of Cambridge University Press.

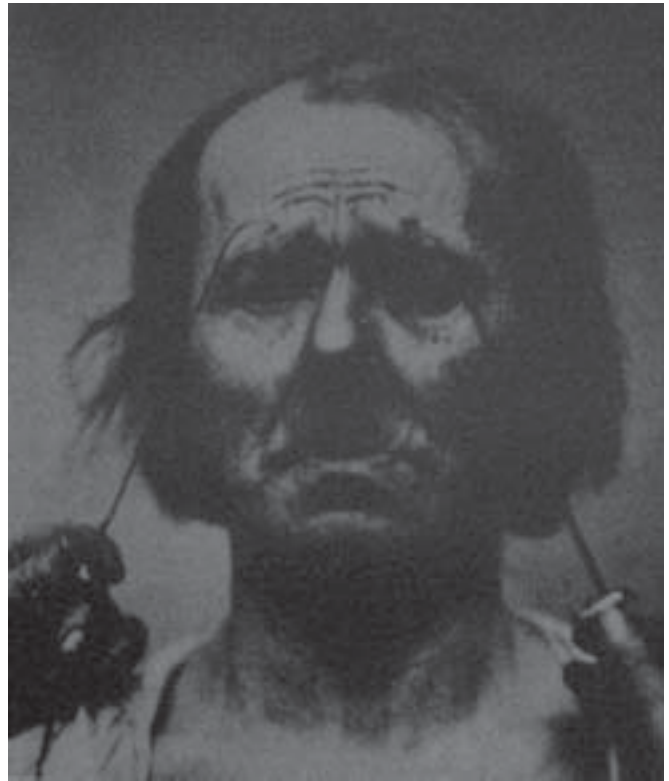
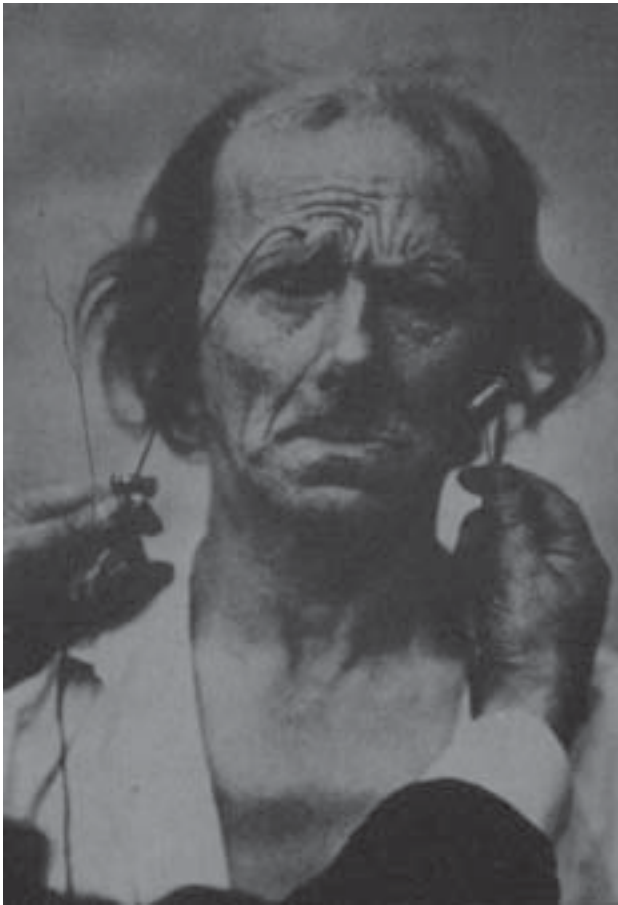


Figure 3. Adrien Tournachon, untitled photographic print, 1852-6, L'École Nationale Supérieure des Beaux Arts, courtesy of Cambridge University Press.



Figure 4. Adrien Tournachon, untitled photographic print, 1852-6, L'École Nationale Supérieure des Beaux Arts, courtesy of Cambridge University Press.



[upper left] Figure 5. Adrien Tournachon, untitled photographic print, 1852-6, L'École Nationale Supérieure des Beaux Arts, courtesy of Cambridge University Press.

[upper right] Figure 6. Guillaume-Benjamin Duchenne de Boulogne, untitled photographic print, 1852-6, L'École Nationale Supérieure des Beaux Arts.

[lower left] Figure 7. Guillaume-Benjamin Duchenne de Boulogne, untitled photographic print, 1852-6, L'École Nationale Supérieure des Beaux Arts.



[upper left] Figure 8. Guillaume-Benjamin Duchenne de Boulogne, untitled photographic print, 1852-6, L'École Nationale Supérieure des Beaux Arts.

[upper right] Figure 9. Guillaume-Benjamin Duchenne de Boulogne, untitled photographic print, 1852-6, L'École Nationale Supérieure des Beaux Arts.

[lower right] Figure 10. Guillaume-Benjamin Duchenne de Boulogne, untitled photographic print, 1852-6, L'École Nationale Supérieure des Beaux Arts.