Sing the Body Electric

Thesis

Presented in Partial Fulfillment of the Requirements for the Degree

Master of Fine Arts

in the Graduate School of The Ohio State University

By

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Graduate Program in Art

The Ohio State University

2012

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Abstract

*Sing the Body Electric* is a multi-disciplinary project that investigates technological augmentation and disruption, and its relationship to the photographic portrait. Using built and found technologies, willing human subjects were documented on film and video as they submitted themselves to electrical impulses of varying intensity. The project explores how systems can be understood or disrupted through subversion, repetition, and humor. The project draws on diverse sources of inspiration that include the photographs of 19th-century scientist G.B. Duchenne de Boulogne, the 1970’s performance work of Chris Burden and the influential photo-conceptualist Bernd and Hilla Becher.
To my grandfather, Robert Burke, for his interest, enthusiasm and love.

and

To Beth Robinson, who started me along this particularly strange path and always encouraged me to keep exploring.
I’d like to sincerely thank my thesis committee of Tony Mendoza, Ken Rinaldo and Steven Thurston — each of whom brought with them unique insight and expertise.

Many thanks to my friends for their willingness to take a walk on the wild side: Joel Atkinson, Severine Cambier, The Chamberlains, Evan Dawson, Brittney Denham, Jon Grubbs, Matt Holt, Michael LaGruth, Erika Mugglin, Paige Phillips, Geraldo Sanchez, Ipek Saygi, and Jeremiah Stilson.
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Process

Many of my projects have begun with a found object (or objects) that serves as a catalyst for the production of a body of work. In 2009, I built an ultra-large-format camera, capable of producing 16 x 20 inch glass plate photographs, using an obsolete copy camera, a bed frame, and a medical exam table. The following year, I fashioned a camera obscura out of an antique Victrola record player cabinet. In these instances, I discovered the inspirational object through a personal donation, inside of a dumpster, or hidden on a thrift store shelf. However, I found the object that inspired my work for this thesis through my participation in an exhibition.

The exhibition — titled *The Hunt* — was organized by artist and curator Beth Robinson in conjunction with the Oregon Health and Science University’s (OHSU) Historical Collection and Archives. *The Hunt* involved the work of 30 artists made in response to objects selected at random from OHSU’s wide and eclectic collection of medical equipment, paraphernalia, files and ephemera. The selected objects included a 124-year-old brass syringe, rubber stamps of the interior of the eye, metal nipple shields, plaster casts of facial deformities, an amputation kit, and, my randomly selected piece: Acquisition #77-60.1.5.
As I was unable to visit the archive personally, I received photographs of Acquisition #77-60.1.5. The object was identified as an “Electro Therapeutic Apparatus.” The accompanying text described the piece as built in the 1920s, using oak, brass, and rubber. Though its exact function was not explicitly stated, it was implied by its name. After some research, I concluded that it was designed to either administer electro convulsive therapies (also known as “electro-shock” therapy) or an early form of transcutaneous electrical nerve stimulation.¹

When I first agreed to participate in The Hunt, I expected to make a single work for the exhibition. Little did I know, I would spend over a year returning to the ideas brought forth by this device in a variety of permutations. My first project involved transforming a toy camera into an image-capture device capable of delivering an electrical shock to either the user of the device or the subject of the photo whenever the shutter button of the device was activated. I titled this device the “Electro Syncho.” This tongue-in-cheek title references the function of Acquisition# 77-60.1.5, as well as the branding of commercial photographic equipment.²

¹ Transcutaneous electrical nerve stimulation (or TENS) is a pain relief therapy that utilizes low level electrical impulses administered through electrodes to stimulate a bodily response in patients.
² “Synchro” is an abbreviation of the word “synchronized” and was commonly used in the mid 20th century in the naming of photographic equipment, particularly camera lenses and photographic flashes.
Figure 1. From left to right: Stephen Takacs, “Electro Synchro,” 2011; Unknown, “Acquisition #77-60.1.5, Electro Therapeutic Apparatus,” c. 1920.

I repurposed an old Hitachi, hard-shell equipment case to house the Electro Synchro. A plaque displaying a custom designed logo and the name of the fictional “Photo Therapeutics Company” completed the piece.

The first images I created with the Electro Synchro were stark, square-format, black-and-white self-portraits that depict me frozen in time by the camera’s flash, grimacing mid-shock with my muscles-tensed. I view these images as a way of allegorically aligning myself with past patients of electro-convulsive therapy who were submitted to treatments for disciplinary — rather than therapeutic — reasons. These photographs continue in the tradition of performance art, particularly the work of the artist Chris Burden.
In the early 1970s, Burden utilized the artist’s body and the threat of electrical shock in several challenging performances, such as *Stairway to Heaven* and *220*. In these performances, Burden risked bodily harm, even possibly death, by electrocution. This groundbreaking work challenged social norms and the generally impassive role of the audience. In works like *Stairway to Heaven*, the audience members becomes a witnesses to the transgressive actions of the artist, and, because of the extreme nature of the work, they are forced to evaluate their position as impassive spectators.
History

My artistic influences include contemporary artists such as Mathew Barney, Chris Burden and Rineke Dijkstra, but also those of the past. In the process of researching medical uses of electricity, I discovered the work of 19th-century French scientist and photographer Guillaume Benjamin Amand Duchenne de Boulogne, who became quite influential to my thesis work, Sing the Body Electric. G. B. Duchenne de Boulogne is well known for his work in the medical field as an early historical pioneer of neurology and the inventor of transcutaneous muscle stimulation. In the photographic field however, Duchenne is a rather obscure 19th-century oddity. He is noted by a few specialists for his disturbing series of photographs of human subjects undergoing electrical muscle stimulation, and for publishing the first medical text illustrated with photographs.

Through his development and use of noninvasive methods of electrical muscle stimulation, Duchenne de Boulogne attempted to map the physiology of the human body. Over the course of 20 years of research, he developed therapies, wrote papers and published numerous medical books on the subject. One of the

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3 Earlier experimental methods of electro therapies, such as electro puncture, were not only painful to patients but dangerous as well. Electro puncture therapies commonly led to necrosis of a patient's muscle tissue.
books, *Mecanisme de la physionomie humaine; ou Analyse electro-physiologique de l’expression des passions applicable a la pratique des arts plastiques*\(^4\), included a series of photographic portraits that sought to codify the expressive qualities of the human face. His working methodology involved using electricity to selectively stimulate muscles in a human subject’s face. Through careful electrode placement, empirical observation, and his own creative judgment, he worked to map the specific muscles involved in creating facial expressions.

Published in 1862, Duchenne’s *Mechanism* was a groundbreaking text in terms of its medical content, but also because it was the first medical volume that utilized photographs.\(^5\) The photographs are bizarre, beautiful and, at times, seemingly beastly depictions of men and women undergoing electrical stimulation of their facial muscles. Duchenne’s research in *Mechanism* occupies a strange area of knowledge, more common in the Victorian-era than the 21\(^{st}\) century, which blurs the lines between art and science. Thusly, Duchenne divided *Mechanism* into three sections, “General Considerations,” a “Scientific Section,” and an “Aesthetic Section.” The Scientific Section explained, among other things, how muscles worked in isolation and in association with one another to create facial expression. The aim of

\(^4\) The mechanism of human physiognomy; or, the electro-physiological analysis of the expression of the passions, applicable to the practice of the plastic arts. For the purpose of this paper, the above text will now be referred to as “Mechanism.”

\(^5\) The date of actual publication is an area of some debate. The book was published in sections during 1862 and possibly into 1863.
the Aesthetic Section was to correct, or critique, the anatomical rending of facial expression in sculpture and painting.\(^6\)

![Figure 3. G.B. Duchenne de Boulogne, “Plate 64, Terror Mixed with Pain, Torture,” c. 1854–62.](image)

All of the models that Duchenne photographed (with one exception) were enlisted from Salpetrier, a hospital for the poor in Paris, where he frequently worked.\(^7\) Despite Duchenne’s insistence that the participation of his subjects was voluntary, one can’t help but question this when viewing images like *Plate 64*,

\(^6\) Duchenne boldly re-sculpted and photographed several classical sculptures in a manner that he felt were more anatomically accurate, including the bust of *Niobe* and the face of Laocoön from the version of the sculpture *Laocoön and his sons* that is housed in Rome.

\(^7\) Adrien Tournachon, the younger brother of the famous French photographer Nadar, assisted Duchenne in producing many of the wet-plate collodion photographs featured in *Mechanism.*
Mixture of Pain and Terror. These images raise ethical questions about hieratical relationship of the doctor-photographer and his subjects — whose status as institutionalized patients placed them so much lower in the 19th-century power structure that few felt they would have been able to refuse his requests to be photographed.

8 It is important to note that the older man that Duchenne frequently used as a subject for his photographs had a unique condition in which his face lacked feeling and thus allowed Duchenne to “study the individual action of the muscles with as much effectiveness as on a corpse.” [Cuthbertson 101]
Sing the Body Electric

“What’s fascinating about portraiture is to get a glimpse of the fragility of a person combined with a sense of their strength and beauty.”

—Wolfgang Tillmans

Figure 4. G.B. Duchenne de Boulogne, “Fig 27,” c. 1854 – 62.

In his photographic experiments, G. B. Duchenne de Boulogne attempted to illustrate within a single image of a subject two different, and, in some instances,
strongly contrasting facial expressions by simultaneously stimulating different sets of facial muscles. Duchenne illustrated this duality of expression by covering different sections of a subject’s face with a bar black, as in the synoptic section at the end of Mechanism, or on the set of photographs mounted on canvas seen in Figure 4.

As I looked at Duchenne’s work, I became fascinated by the how a visual reading of the emotion on a single face could vary from one side to the next. This eventually led me to conduct similar experiments of my own using a commercially available transcutaneous muscle stimulator. I was not concerned with mapping the musculature of the face, or illustrating specific expressions as Duchenne was, but instead wanted to explore the ways in which the perception of a person’s emotional state could be disrupted by an electrical current.

Figure 5. From left to right: Stephen Takacs, “Erika,” 2011; G.B. Duchenne de Boulogne, “Figure 35, The Muscles of Joy and Benevolence,” 1862.
The human body is a complex machine that is as susceptible to circuit bending as any other electrical technology. In Sing the Body Electric, electrodes were applied to the face of a willing subject who was given the controls of the device. As the subject increased the amperage coming from the device, the muscles of the face became electrically stimulated — first a tingle, then a tremble and then a contraction that contorted one area of the face while leaving the other unchanged. Photographs were made at various points in the process to document the muscle movements, some of which are impossible to create without electric stimulation.

The resulting images call into question one’s ability to visually “read” a photographic portrait and that perhaps begins to express the duality that exists in all of us. If one side of the face is obscured you may perceive an inviting, well-lit beauty; if the other side of the face is covered you may see a muscular contortion, a grimace of pain... or is it a seductive wink? What does a body, a face, or an arm communicate when its movements are beyond the control of the individual?
The portraits in *Sing the Body Electric* were created using a lighting style that references commercial portraiture; this serves both to ground and de-stabilize the image. The postures of the models and lighting used to illuminate the portraits place the images in the realm of the familiar, creating a pronounced contrast to the action (electrical muscle stimulation) occurring within the image. Couples were chosen as subjects for this reason as well. Admittedly, humor is a factor in the work. I feel that laughter is as valid of an initial response to the portraits as contemplation.
Given the intimacy and physicality of the experience required on the part of the subject in the production of these images, I preferred to work with individuals with I was already familiar with. This aided in creating a space in which subjects felt safe enough to experiment.
Photographing a Subject / Photographer as Subject

“Armed with electrodes, one would be able, like nature herself, to paint the expressive lines of the emotion of the soul on the face of man. What a source of new observations!”

—Duchenne De Boulogne

When I photograph other people, I've always felt that it is important to approach the photographer/subject relationship as if I were the sitter. Thus, in the negotiation between the two, I never ask someone to do something that I would not participate in myself. It is for that reason I will frequently insert myself into a series of images. The practice of using myself as a model, not only keeps me honest, but also communicates to potential subject that I'm willing to make myself as vulnerable as I would like them to be. This practice started as a result of having worked as a nude live model for drawing classes at a local college for several months in 2005.

During my experience working as a model, I found that many students treated models as objects, or non-people, even when they were not working and fully clothed. For instance, when I would pass a student in the hallway my greetings were frequently met with downcast eyes despite a similarity in age, style and shared
interest in art. Several years later, when I myself was an art student and was expected to draw nude models in a classroom setting, I made a point of conversing with the models and treating them with the common respect that I hope to receive from others. This practice continues to this day.

Figure 8. Stephen Takacs “Paige and Evan,” 2012.
My recent videos, like my photographs, contain an element of human collaboration and human/technological interaction. In *Nod to the Notion of Revealing the Hand of the Maker*, three friends and I applied electrodes to our arms. The electrodes were attached to a device capable of delivering randomly modulating patterns of electrical impulses. Each pulse was physically felt and could, depending on the intensity of the pulse, cause one’s muscles to contract. Each participant was able to vary the intensity of the pulses to their own comfort levels. One at a time, we each took turns drawing four basic forms — a triangle, a circle, a square and a spiral. The electrical pulses disrupted our ability to draw the shapes “normally” but
simultaneously created new and unique marks. The electrodes, like most technological developments, both helped and hindered our ability to create.

Video works, like *Nod to the Notion of Revealing the Hand of the Maker*, draw parallels to Mathew Barney’s ongoing *Drawing Restraint Series*. In the *Drawing Restraint Series*, Barney works within, and against, physical limitation to create drawings. In our work, the framework in which the drawings are made takes precedence over the actual drawings themselves. The act of creation is a performance while the drawings simply become residue of the original performative moment. In this way, artistic practice functions as the creation of parameters.

While Barney creates heroically physical challenges in his *Drawing Restraint Series*, I’ve chosen to continue a more clinical approach to my drawings. This not only refers to the medicinal use of *Acquisition # 77-60.1.5* and *Duchenne de Bolougne*, but also to the work of the German photographers Bernd and Hilla Becher. The Becher’s are known for their 40-year photography project in which they categorically photographed industrial structures. When they photographed, the Becher’s maintained a consistent method of visually framing the structures in the center of their camera’s ground glass. They photographed at similar times of day and under similar conditions so that their subjects appeared isolated on a white backdrop. When the images were finally displayed together in a grid, the isolation of the subject allowed viewers to carefully consider the nuance of similarity and difference.
In *Nod to the Notion of Revealing the Hand of the Maker*, similar structures of formula, isolation, and comparison are at work. The figures, both hand and head, shown in the final video are depicted on neutral backgrounds. The sequence of drawings — triangle, circle, square, and spiral — remains the same and allows viewers to draw comparisons between the drawings and the makers of the drawings.

In many ways, the videos function as portraits, perhaps more successfully (at least in the modernist sense), than the photograph in *Sing the Body Electric*. As each figure struggles to make a mark, elements of character are revealed.
Conclusion

Electrical interfaces between the human body and machines provided a consistent framework for my thesis, *Sing the Body Electric*. The final work manifests in a series of still photographs and several videos. These works draw on various historical precedents in art, as well as concepts of technological augmentation and disruption of the body. The videos and the photographs explore the portrait, and what it can and cannot reveal.
Bibliography


