Digital Chaos: Exploring Relationships Between Technological Advancement and Visual Experience

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Rochester Institute of Technology

A Thesis Submitted to the Faculty of
The College of Imaging Arts and Sciences
School of Art
In Candidacy for the Degree of
Master of Fine Arts in Fine Art Studio

Digital Chaos:
Exploring Relationships Between Technological Advancement and Visual Experience

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May 4, 2014

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Abstract

More so than any other time in history, humans are being exposed to an enormity of digital images every day. The internet, combined with accompanying technological advancements in cellular communication has created an exceptionally chaotic visual experience within the daily lives of millions of people. Through the use of digital photomontage, my artwork attempts to quantify and evaluate the impact that thousands of digital images may have on the emotional and psychological state of human beings. Concurrently, I am interested in exploring the mental repercussions of visual overload, specifically, how chaotic digital experiences may impact the quality of the human condition as a whole. I use the internet to recontextualize found images through a variety of digital manipulation methods to create a system of aesthetic and conceptual relationships. Each collage is comprised equally from images I have produced myself, and appropriated images found on the internet to indicate the increasingly ambiguous boundary between our physical and virtual realities. I often use images that imply a war-like opposition between our natural and technological environments. I believe such images are indicative of the conflicts that take place on a psychological plane of consciousness within our minds every day as we strive to cope with our new digital reality brought forth by rapid technological advancement.
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Introduction

Born in 1987, I became part of a generation that entered the world during the rise of a technological revolution, ushering in the digital age as we approached the new millennium. The 1990’s witnessed rapid developments in computing technology which, along with the development of the internet, caused an unequivocal shift in the way human beings gather, interpret, and share information. In 1993, for example, the internet carried only 1% of the information flowing through two-way telecommunication, while in 2007 more than 97% of all telecommunicated information was carried over the internet.\textsuperscript{1} As of 2011 the internet has grown to over 2 billion individual users, and according to the International Telecommunications Union an estimated 77% of the developed world is expected to be connected to the internet by 2013.\textsuperscript{2} Throughout the 90’s and 2000s, I had the unique experience of watching the world make the digital transition as I grew into adulthood.

In the past decade it has become evident that the nature of our daily visual experience is rapidly changing due to advancing technology. As computer technology becomes more powerful and ubiquitous, it becomes more intimately integrated into our daily existence. As a result, a majority of individuals in the developed world are compelled, if not required, to spend vast amounts of time gazing deeply into a computer screen, constantly navigating through an endless labyrinth of information on the internet. Today, more so than any other time in human evolution, we are exposed to more visual information in the form of digital images and video than ever before.

\textsuperscript{1} Miniwatts Marketing Group. "World internet users and population stats." Internet World Stats. 2011.

\textsuperscript{2} International Telecommunications Union. "Key ICT indicators for developed and developing countries and the world." Geneva, 27 February, 2013.
An explosion of advancement in communication technologies has caused a deluge of digital imagery to enter our daily visual experience. The enormity of digital images that we are exposed to everyday (in even the most routine aspects of internet use) can create an overwhelmingly chaotic visual experience in the mind of the user. Each image one sees, for example, evokes an idea, thought, memory, or emotion. As the meaning of an image unfolds, the viewer gains a unique mental experience in reaction. This image is absorbed in the viewer's memory and ultimately, distorted over time. Therefore, as millions of digital images are processed in one’s mind through years of internet use, I believe it is reasonable to hypothesize that each of these visual memories can slowly, one digital image at a time, modify how a person thinks and therefore, impacts who they are. For this reason, I believe this sense of visual-overload in contemporary culture, as caused by the ubiquitous digital image, is having a deeply powerful effect in changing the nature of visual experience, and visual culture as a whole.

Sharing this opinion, for example, is Case Simmons of the collaborative artist duo Simmons & Burke stating in a 2011 interview that "I would be a completely different person if I didn't sit here in front of a computer all day every day looking at thousands of"
images and cutting them out.” Simmons and Burke together create, massive large-scale digital collages composed of thousands of images in attempt to make sense of the cacophony of information available on the internet.

One of the highest goals of art is to reveal subjective truths about the human experience. In A Brief History of Time, Steven Hawking asserted that “The world has changed far more in the past 100 years than in any other century in history. The reason is not political or economic but technological—technologies that flowed directly from advances in basic science.” If technology is the single most powerful catalyst in changing the nature of our existence, therefore, I believe technology is an unavoidably crucial element for any artist to consider. Contemporary culture, in many ways, is defined by our tendency to rapidly develop and accept new technologies as an integral part of our lives, while in the process, changing the very nature of our lives themselves. Accordingly, in its broadest terms, the artwork produced for this thesis is a visual exploration of how digital technology effects the human psyche. Through a combination of digital photomontage, printmaking, and digital video editing processes, I create images that attempt to express the intricate connections between our physical and digital life experiences. By digitally manipulating photographs and video, my goal is to create a visual experience that expresses the agonies and ecstasies contained in a world undergoing rapid technological advancement. Through my artwork I hope to forge a connection between myself and the viewer that opens a dialogue about how rapidly digital innovation is affecting our visual perception of reality.

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Context

Growing up in the midst of a digital renaissance, it was initially very difficult to identify and understand how technology was rapidly changing the world. As a teen, like many of my peers, I was so completely enamored by new technologies that it was impossible to have any kind of apprehension towards technological progress. I gladly celebrated the fact that I could spend countless hours on a computer with a high speed internet connection, never considering that it would yield any negative emotional or psychological impact.

My opinions, however, began to change when I had the opportunity to travel through Germany and Austria in 2007. Nearing the end of my undergraduate career in Art Education, I traveled to Europe for a week in the middle of a lengthy assignment for a Digital Imaging course. The assignment was to make a 20 page book of manipulated photographs that together tell a story about one’s personal connection with any chosen place. In the period of nine days, I took over 2,000 photos of Munich and Salzburg, even after losing 900 of them to a faulty memory card. Also, while in Germany I spent my downtime finishing a term paper for my aesthetics class, where I was attempting to analyze Chinese Chan Buddhist painting through the lens of Heideggerian philosophy. What I found most interesting about both ideologies was the common held belief that our understanding of perception can shape our sense of reality. I did not realize it then, but this idea would serve as the single most important seed from which my new style of artwork would grow. Both Chan Buddhists and Martin Heidegger were committed to uncovering a pure understanding of reality, devoid of our innate human delusions. As I walked the city taking photos, I continuously revisited one thought shared by both philosophies: Our understanding of outward phenomena, as analyzed by our intellect and evaluated by our emotions, creates our reality. With this in mind, I traveled the streets of Munich and Salzburg, with very limited knowledge of the German language. I was forced to rely on my visual senses
only, and for the first time, I recognized how overwhelming our contemporary visual culture had become. As I wandered the city snapping pictures, in attempt to capture and record the widest range of potential subject matter I could find available in Munich. For the first time in my life, I had to rely purely on my visual instincts to help me understand the new culture in which I was immersed. I was both surprised and fascinated by the sheer amount of digital images projected and printed around the city, and how invasive they seemed when juxtaposed against the opulent Romanesque and Baroque architecture.

Upon returning to New York, I attempted to capture the chaotic, overwhelming, yet aesthetically enthralling experience of my journey by digitally manipulating my photographs using Adobe Photoshop. In my first photomontage entitled Two I discovered the power and immediacy through which I could express my thoughts and emotions through digital manipulation. In this work I took an image of a store front advertisement through a window with Munich’s Marienplatz (or main square) reflected in the background as source material. I then superimposed this image with a mirrored version over top of the original, resulting in a densely layered image that echoes the visual chaos I experienced in my travels.

Two, 2006, C-print, 25 x 25 in.
Immediately after completing *Two*, I discovered that this digital photomontage technique created a unique visual experience that allowed the viewer to see an image that is both flat and abstracted, yet simultaneously photo-real and filled with depth. In *Two*, I attempted to employ the chaotic juxtaposition between abstraction and figuration prevalent in the dynamic compositional arrangements of early 20th century Dadaist collage, from which I drew a particular influence from the work of Raoul Hausmann. I found it fascinating that even though this image was made with contemporary computer technology, it could still evoke the hallmark characteristics of 20th century abstract expressionist painting. *Two*, in essence, represents the birth of an aesthetic language that provided me with the means through which I was able to express my ideas about visual culture in a personally significant manner. Through my experiences in Europe, I discovered that new communications technologies have flooded our visual culture with a deluge of digital images, and that for the first time in human evolution, we are being exposed to more visual stimulus than ever before. In the artwork produced for this thesis, I set out to further perfect my artistic vision (through the lens of digital photomontage) in order to cultivate a deeper understanding of how technological advancements are rapidly changing our perception of reality.

Shortly after returning to New York, I was diagnosed with Lyme Disease. My experience with Lyme would later prove to be one of the most important events responsible for shaping me
into the artist I am today. Going undetected for months or even years, tick-borne bacterial infection had spread to my neurological system resulting in frequent migraines, chronic fatigue, and fibromyalgia symptoms causing severe pain throughout my entire body. As my health declined, my physical existence became much more limited. Eventually, I found myself seeking refuge from my chronically painful symptoms in the digital world. Constant pain and fatigue provoked me to spend hours, even whole days adrift in the endless sea of information and entertainment on the internet. The internet had everything that I needed to escape the sobering reality of my daily existence.

Connected to my computer was an endlessly expanding alternate universe of second hand knowledge, and I wanted to see all of it. After a few months I began to realize that the internet is as much of a frontier for new visual stimuli as the physical world itself, insofar as sight and sound is concerned. Unlike actual reality, however, virtual reality floods the eye with a plethora of images, videos, and sounds that are separated from their context in the physical world by the barrier of the computer screen. Eventually, I noticed that long amounts of time online began to have an interesting effect on my memory and dreams. As I would drift off to sleep after 5, or even 10 hours connected to the computer, I began to see flashes of images, pieces of video, or sound as if they were echoes from the cavern of my memory, calling back to me from one of my marathon sessions on the computer. My dreams would regularly contain an indecipherable mixture of memories from things I had seen on the internet combined with real life experiences. In my dreams, I could not tell the difference between the two realities. It was as if my digital and physical world had completely merged into one while I slept. When I was finally nearing a full recovery from Lyme after a long, arduous treatment, I began to visually interpret these dreams in my photomontage work.
The first successful photomontage I created with this goal in mind was a triptych named *Spirochete*. The work is titled *Spirochete* after the classification name of the Borrelia Burgdorferi bacteria responsible for causing the Lyme Disease infection. Contrary to my previous beliefs, I was surprised to discover that the process of digital photomontage allowed me an opportunity to record my experiences in a more personally powerful way than I had ever been able to accomplish in a drawing, painting, or sculpture. About halfway through completing *Spirochete* I realized that digital photo-manipulation gave me the unique ability to expressively manipulate actual pieces of my two realities (both virtual and physical), symbolized through the digital image. For this reason, I no longer found it necessary, with this body of work, to use my classically-trained skills I had spent so many countless hours to hone.

*Spirochete*, 2008, C-print, 24 x 72 in.

Within *Spirochete*, I expanded my visual vocabulary to include my personal medical charts, X-rays, CT and MRI scans in an attempt to intimately involve the viewer with my experience with Lyme Disease. I combined these images with many textures, anatomical drawings and medical illustrations from a variety of online sources and medical journals. Initially, I was motivated to create this photomontage for my own posterity by trying to record and interpret the digital “echo” phenomenon I had been experiencing in color and composition. By time I completed *Spirochete*, though, I realized that by transforming these images through
photomontage, I discovered a deeper personal meaning within the work: Ultimately, I succeeded discovering a more complete understanding of my experience with Lyme, and what it meant to persevere through relentless chronic pain. In this respect, my digital photomontage process began to evolve into a therapeutic mental practice that I can only closely relate to meditation.

_Spirochete_ ultimately served its expressionistic purpose by providing insight into a traumatic experience with disease, however, my original goal remained elusive; I still could not explain the strange effects prolonged computer use was having on my dreams. After discovering how important photomontage could be in my artistic development, I decided to commit myself to working with the medium exclusively by my second year in graduate school. Photomontage seemed like the perfect platform on which to launch an investigation into my dreams, and by extension, provide some personal insight into the psychological effects of prolonged internet use.
Evolution

My recovery from Lyme disease marked the beginning of the most prolific period of experimentation in my artistic career. In Alan Singer’s Digital Printmaking class, I experimented with manipulating a wide range of image combinations in attempt to further explore my photomontage layering process. As a method of investigation, I would routinely spend countless hours collecting images for source material online. When I exhausted my ability to find new imagery, I used a website randomization software called StumbleUpon. This is one of many discovery engines (a form of search engine) found online that are programmed to find and recommend content to its users. This software would allow me to "stumble" passively from site to site, never knowing what would be waiting for me after each click of the mouse. My initial goal was to experience as much of the internet as I could, taking advantage of my right to any and all information it could provide. As a result of my investigations, I began to live in awe of the internet’s seemingly infinite expanse. After one week alone, I compiled a bank of over 5,000 source images from the web, and was surprised to feel as though I had barely begun exploring.

As weeks passed, I began to notice my dreams were growing in scope, detail, and complexity. The visual echoes of the images I found in my research now seemed to meld completely with those from my physical reality, to form an entirely new dreaming experience. It was as though the echoes were now harmonizing to form *music*. In any given dream, for example, I would find myself speaking and interacting with people I knew personally, but in the context of a landscape, building, or battle I had seen in an image, video, or movie online. This would also happen in vice-versa as I would combine images of people I only knew digitally, within the context of a real place I had been to physically. Whether it came from my digital or physical world, I was fascinated with the fact that it all felt real in my dreams. It was as though
my subconscious memory could no longer decipher between the physical and digital worlds. I needed to find a way to express this phenomena visually in order to figure out if there was any kind of universality to my dream experiences.

One of the most important artists to inform and guide my exploration of digital photomontage has been one whom I consider to be the modernist master of multimedia experimentation, Robert Rauschenberg. Since I first encountered his work at a retrospective at the Metropolitan Museum of Art when I was only a freshman in high school, Rauschenberg has been a strong lifelong influence in my work, specifically informing the photomontage process I developed in the artwork produced for this thesis. Evident in his combines and silk screen collage work, Rauschenberg created an approach to painting where the possibilities of image and object manipulation seemed endless. According to Patrick Schrag of the Beyeler Foundation Museum, in reference to Rauschenberg’s photomontage *Windward*,

Rauschenberg combines photographs of the Statue of Liberty with shots of New York house façades, confronting these with images showing the election of the Pope in the Sistine Chapel and crates of oranges. The composition is dominated by the deeply iconic figure of the eagle. In what appears to be a random arrangement, the artist fosters an enigmatic and richly associative dialogue between the various juxtaposed pictorial worlds that defies any attempt at aesthetic categorization.5

Accordingly, art historian H.H. Arnason supports Schrag’s assertions and relates them to the wider scope of art history when he claims Rauschenberg, “literally used the world as his palette… accepting virtually any material as fodder for his art. This element of ‘eclectic pastiche’ is typical of the postmodern approach to culture.” Because of Rauschenberg, I began to look at all things digital as a potential art medium: images, video, and sound alike. I also became both fascinated with, and inspired by his creative process, specifically his methods of gathering inspiration. In an interview conducted by Dorothy Seckler in 1965 for the Smithsonian Archives of American Art Rauschenberg claimed,

There was something about the self-assertion of abstract expressionism that personally always put me off, because at that time my focus was as much in the opposite direction as it could be. I was busy trying to find ways where the imagery and the material and the meanings of the painting would be not an illustration of my will but more like an unbiased documentation of my observations…

After reading this interview, I realized that I needed to adopt a similar approach toward choosing my subject matter. I discovered that I was trying to create something that was nearly impossible; I was trying to fully encapsulate the psychological impact of internet use in a single piece. Instead, I realized what I needed to do was simply to document my experience as Rauschenberg did, and find out through a larger series of work if my personal experience reflected something universal about how the digital image is changing our visual culture, and by extension, changing how we see the world.

After many failures and false starts, I created a photomontage named Delusions that finally seemed to successfully reflect an accurate documentation of my echo-dream experiences.

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In *Delusions* I attempted to softly blend images of mannequins inside of a harsh, industrial complex. I found mannequins fascinating as a subject matter because they represent an oddly specific kind of cultural abstraction of the human body made specifically for fashion marketing and advertisement. I photographed the mannequins on the street in downtown Rochester, and as I saw them separated from their original context in a department store, I noticed that they seemed to exude an interesting quality of lifelessness coupled with a faux sense of humanity indicated through their subtle gestures. These images, when combined with many others from appropriated online sources of industrial parks, factories, and train yards yielded a unique juxtaposition between the vulnerable human forms, and the aggressive industrial environment. The most important symbolic imagery in this photomontage are the mannequins’ dissolving, translucent heads. I wanted the mannequins’ heads to seem as though they were dissolving into the industrial landscape, symbolizing the feeling of becoming lost in a digital world. The original context of these
images supports this idea, as the mannequins existed only in my physical world, and the images from which I created their industrial environment were taken solely from the digital world of the internet. The composition was intentionally arranged to give the viewer a sense of rapid movement within a claustrophobic space, inviting a sense of dreamlike panic and anxiety into the frame.

I explored this sense of anxiety further in my next piece entitled *Injection*. While at the Rochester Public Market, I discovered that many of the fruits and vegetables for sale had been genetically modified. These genetically modified organisms (or GMOs), in a similar way to the mannequins, represent an organic form that has been modified by technology in order to serve a capitalistic purpose. In *Injection*, I overlaid images of a genetically modified cabbage with
images of hydraulic cables, circuits and wires to show how technology had seemed to be forcibly injected into every facet of modern life. Also, in order to create a connection with the ideas I pursued in *Delusions*, I hid several mannequins in the background, the most visible of which is in the top right hand corner of the frame in the form of a reclining, headless woman, representing the seductive power of technology.

Even though I was pleased with the accuracy and overall emotional impact of these images, I was not satisfied with the aesthetic I was getting from the printer. After the image was printed, it seemed to lose some of the vitality and energy that I saw on my computer screen. I experimented relentlessly with image transfer processes requiring a wide range of materials such as acrylic gel, toner, alcohol, DASS film, CG65 film, amongst many others. It was not until I made my first 4 Color Inversion Intaglio-Type, however, that I was able to produce the full realization of my artistic vision on paper.

Under the tutelage of Keith Howard, I developed a passion for Non-Toxic Printmaking during the second year of my graduate program. Through Photoshop, I became enamored with the ability to manipulate images into a photomontage, however, I had never before dreamed of the possibilities for further transformations waiting for me in the printmaking studio. I was specifically fascinated by a kind of printmaking process called the 4 Color Inversion Intaglio-Type. This process is best described in the context of the following excerpt from www.nontoxicprint.com,

Traditional intaglio printmaking cannot produce the kind of full photographic color achieved in other print media. In the year 2000 Keith Howard and his colleague David Jay Reed set out to change that fact. Through their collaboration, a number of Intaglio Type techniques were developed that bring photographic realism to the intaglio medium - in full, glorious color. In a similar manner to screen printing or offset, a set of primary colored plates is made from color separations then overprinted, on the same sheet of
paper, to produce the full spectrum of colors. The fact that these prints are made in the intaglio manner gives a tremendous richness and saturation to the resulting image.\(^8\)

The 4 Color Inversion Intaglio-Type, is a non-etch intaglio process that produces a full color, continuous tone image without the use of harmful chemicals necessary for traditional techniques. This process is made possible by exposing a digital halftone to a dry photopolymer film called ImagOn (created by DuPont to assist in the production of circuit boards) using ultra violet light. The first step of this process is to begin with a full color image, and digitally separate the color channels into four digital halftones comprised of cyan, magenta, yellow, and black (CMYK) using Photoshop. These digital halftones eliminate the need for an aquatint or mezzotint, as they are comprised of a random dot structure that allows the unexposed areas of the ImagOn to hold ink after the plate is developed. Depending on your printer, the desired maximum black value to create the perfect halftone varies greatly. In our studio, the optimum black value for our IPF6000 Cannon printer is 80-85%, which can be adjusted with curves in Photoshop. Once all four of the halftones are digitally optimized, they are ready to be printed out on transparent mylar.

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Next, the ImagOn film must be laminated onto four identically sized Polyethylene Terephthalate Glycol Plastic, or PETG plates. For larger scale prints, like the ones produced for this thesis, I used an immersion lamination process. After the ImagOn is relieved from its plastic cover film, it is placed in a water bath over a fully submerged PETG plate. The plate is then carefully lifted out of the water, meeting the ImagOn at the surface. This process of lamination takes experience, patience and finesse to perfect, however, once mastered it is an extremely efficient process of lamination for large scale prints.

Once all plates are dried, they are ready to be exposed to the images with a UV exposure unit. Before one can have a reliable exposure time, the UV exposure unit should be regularly tested and calibrated. Also, I found performing my own exposure tests for each plate to be an important way to isolate variables if something goes wrong later in the development process. Once exposed to the light, the top mylar coating is removed from the ImagOn. Then, each plate is submerged into the developer. Our "soft water" developer solution is comprised of 10 grams of sodium carbonate per 1 liter of water. In order to find the correct development time, the developer solution must be routinely tested and monitored.
When ImagOn is developed, the portions of the image that were exposed to the UV light resist the developer, while the developer bites into the parts of the ImagOn that were blocked by the black ink on the digital halftone. The developer eats away at the unexposed areas, allowing the halftone to create texture on the ImagOn that will hold ink through the printing process. When development is completed, the plate must then be taken out of the solution and quickly sprayed with vinegar to neutralize the ph balance of the solution and stop development. The whole plate should then receive a gentle wash with cold water to remove all excess ImagOn. After all four CMYK plates have been developed, I have found it important, through trial and error, to let the ImagOn harden for a period of 12-24 hours. This will help the ImagOn retain its print quality through the printing process, without chipping or scratching.

Finally, it is time for inking and printing. As is consistent through the entire Nontoxic studio, I used a variety of Akua soy-based inks to print my plates. Akua is a unique, viscous ink that shows an incredible range of color depth. The ink is applied to the plate using a plastic straight edge, typically, a credit card works best. A thin coat of ink should be applied to the entire plate, then wiped with a cheese cloth to remove excess ink. A film of ink residue is often left on the plate after using the cheese cloth, so many find it important to rub the surface of the
plate with newsprint. I, however, have found it advantageous to experiment with a plate tone and will therefore occasionally skip this step when inking certain plates. Normally paper would have to be prepared in a water bath prior to printing, and dried until only slightly damp (the water must be inside the paper, not on the surface). I bypassed this step by using Arches 88 waterleaf paper, which is absorbent enough to be printed dry with Akua inks.

Multi-plate registration, in many ways, was my most difficult challenge. The complicated photomontage imagery I was producing in Photoshop meant I had absolutely no margin for error. I found it helpful to use a headlamp, which allowed me to see through the PETG plate to the surface of the print while registering the plates on the press bed. The yellow plate is sent through the etching press first, followed by magenta, then cyan and finally black to achieve a full color image.

Prior to committing myself to the digital photomontage process, I had been concentrating in ceramics and mixed media sculpture. Making art on the computer had always felt exciting and satisfying in its own right, however, I found that spending many hours alone with the computer could also feel alienating. I missed the studio atmosphere, and potential for
collaboration with other artists. I also missed the physically labor-intensive process of bringing
an art object into the world. Fortunately, the 4 Color Inversion Intaglio-Type gave me the
opportunity to develop an entirely new set of skills and was exactly the kind of challenge I was
looking for. Like any printmaking process, this method requires precision and craftsmanship
that one can only gain through constant practice, along with the help and guidance of a
community of printmakers.

It was the incredibly expressive results that came from the Four Color Inversion process
that motivated me to focus on this printmaking medium. The surface activity gained through
this process gave my images a dynamic quality that seemed to be imbued with even more life
and vitality than what I had seen on my computer screen. All machine-like slickness I found in
the inkjet-printed versions of my work had been obliterated. Upon completion of my first 4
Color Inversion Intaglio-Type with an image titled Hypercage, I realized that I had an incredible
opportunity to elevate my photomontage works to new expressive heights using this
printmaking process.

_Hypercage, 4 Color Inversion Intaglio-Type, 22 x 32 in._
Body of Work

_Hypercage_ was the first piece I completed that would be included in my final body of work for this thesis. This was the first print I made that successfully released the potential I saw in the 4 Color Inversion Intaglio-Type process to bring my photomontage work to life. As a result, _Hypercage_ represents a significant evolution in my photomontage aesthetic. At the time it was completed, this image was the closest I had ever gotten to representing the visual echoes of the digital world in my dreams. Beginning with _Hypercage_, and throughout the body of work produced for this thesis, I set out to express something universal about the current state of visual culture through the lens of my own experience. One of the most important goals for this body of work was to develop a visual language that represented the collision of the digital and physical memories that I was experiencing in my dreams. _Hypercage_ and the work that follows serve as mirrors reflecting the subconscious memories of my digital and physical experiences. Through photomontage, I hope to open a dialogue with the viewer where it becomes possible to expand our understanding about how rapidly communications technology is changing the nature of visual experience.

Time lapse illustration of digital photomontage layering process.
Hypercage represents a major evolution in my digital photomontage technique. By developing my photo manipulation skills in Photoshop over an extensive period of research and experimentation in graduate school, new discoveries in image layering techniques began to open new possibilities for my aesthetic vision. Seen on the previous page is a five step progression through the twenty hours and over fifty Photoshop layers it took to produce Hypercage. The image began with a photo I took of an old birdcage, set in an industrial landscape similar to the one I used in Delusions. Seen throughout the composition are images of a heart surgery, a rocket launching into space, and several examples of technological devices and machinery. These objects are flanked with gas clouds and explosions creating a sense of war-like chaos within the frame. In the center of the frame toward the top is an abstracted image of a deer climbing out of the cage as the top half of its body sublimates into the clouds. Hypercage explores technological advancement from many angles. I found it fascinating that technology had permeated every facet of our lives. As evident from the imagery in this photomontage, for example, we can use technological advancements to repair our bodies, save lives, explore space outside our planet, or create bombs to kill each other.

It is important to note, however, that I am not by any means trying to provide reverence for, or condemnation of advancements in technology with the work for this thesis. It was only through searching broad terms in Google images like "technological progress" that these images were found. I try to maintain a Rauschenberg-style of critical distance from the images I work with. Even though I am trying to make sense of personal phenomena of visual echoes I experienced in my dreams, my sole motivation is to record what I see through the computer. Through photomontage, I am attempting to create an aesthetic that is as chaotic and over-stimulating as my visual experience of the digital world. By densely layering one image on top of another at low opacities, my goal is to build an overwhelming richness of form, texture and
color with little room to escape the picture plane. In the work created for this thesis, I decided it was conceptually imperative to eliminate negative space to create a sense of tension and claustrophobia. I want the viewer to feel drawn to the textures, colors, and hidden imagery and then slowly become startled, confused and uncomfortable, after gazing more deeply into the details of the image. This "push /pull" or "attraction / repulsion" effect in my work serves as a metaphor for how technology, specifically the internet, can seduce us into entrapment.

I explored this push / pull effect further in my photomontage entitled *Unstoppable Forces*, one of the most aggressive images I have ever made. I revisited war-like imagery to represent the psychological battle between one's digital and physical worlds. Framed within an overpass, is a violent dissonance of explosions, technological machinery, and surgical footage juxtaposed against distorted animal and human forms. Inside of an airplane turbine in the right third of the image, I overlaid an image of my own optic nerve, given to me by my ophthalmologist. Coming out from the optic nerve is a massive explosion of fire, engulfing a military vehicle in the lower right hand corner of the frame. Supported by the surrounding
imagery, *Unstoppable Forces* is a meditation on the chaos and strife involved in a culture undergoing rapid technological advancement.

In his book *What Technology Wants*, founder of *Wired* magazine Kevin Kelly describes the entirety of technological evolution in a single term called “The Technium”. The Technium represents the system of values within our culture that are responsible for perpetuating constant, rapid technological advancement. Because we are unable to comprehend the velocity at which it develops, The Technium exceeds our control. As the internet develops, for example, it becomes more deeply engrained into our daily lives as we find innumerable ways to make it more efficient and widely accessible. In this way, the internet (as part of the Technium) ensures its own survival, grows in complexity, and evolves just like an organic organism. This will eventually lead to the internet undoubtedly taking a more dominate presence in our world culture. I fear that this trend could cause compulsive internet use to become a widely accepted behavior, that is to say, if it has not become accepted already. In an interview with celebrated director and technological innovator George Lucas, Kelly asked whether the advancement of technology will cause more harm than good, Lucas replied,

> If you watch the curve of science and everything we know, it shoots up like a rocket. But the emotional intelligence of human kind is equally, if not more important than our own intelligence. We are just as emotionally illiterate as we were 5,000 years ago; so emotionally our line is completely horizontal. The problem is that the vertical and horizontal lines are getting farther and farther apart. And as these things grow apart, there is going to be some consequence for that.

Accordingly, the goal of this body of work is to open a dialogue through which we can better understand our relationship with technology. I believe it is a cultural imperative that we make

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an effort to understand how deeply technological advancement is affecting the quality of the human experience.

In the next two prints created for this thesis Aviation and Lift, I further explored the psychological impact of visual bombardment through digital media through a different lens. Both collages are filled with imagery of both organic and technological advancements in flight. In each image, there are elements of flying organisms, such as ospreys, owls, and various insects, blended with bombastic machinery like turbines and jet engines producing bursts of flames and smoke that engulf the entire scene. In both pieces, my goal was to convey a sense of entrapment. The birds, insects, and other organisms are trying to fly out of range, but their attempts at escape are in vain, as their bodies are dissolving into, and melding with the technological landscape surrounding them. This imagery serves as a metaphor for our growing reliance upon and attachment to technology. For many of us, our responsibilities to our careers and family make it imperative to use digital technology every single day of our lives. If, for any
reason, we desired to give up our connection to the internet, smart phone, or computer, millions of us would be forced to make drastic life changes. Computing technology, therefore, has firmly engrained itself in our lives, becoming part of our identity as a culture and as an individual.

The last in the series of five Intaglio-Types produced for this thesis is entitled *Maximum Capacity*. In this photomontage, I attempted to create a cacophony of shape and color that could reflect, in a more visceral way, how complicated visual culture had become through the endless expanse of the internet. I layered more than 100 images into *Maximum Capacity*, exploring a wide range of technological symbolism. By layering a larger amount of images at a lower opacity, I attempted to achieve a more complete sense of unified abstraction throughout the image. This time, I also gave the viewer nowhere to rest within the composition, amplifying the sense of intense claustrophobia through the compositional technique of “horror vacuii”.

*Lift, 4 Color Inversion Intaglio-Type, 23 x 36 in.*
With such an ambitious goal in mind for *Maximum Capacity*, I looked to the work of artists Julie Mehretu and Mark Bradford, who both attempt to apprehend massive cultural and historical systems through processes of collage and layering. Mehretu creates rich, immensely layered, large scale abstractions though a laborious process of drawing. According to an expository documentary for the Art21 interview series, "Mehretu’s paintings and drawings refer to elements of mapping and architecture, achieving a calligraphic complexity that resembles turbulent atmospheres and dense social networks."

With similar intent, Mark Bradford uses a similar process of richly layered expressionistic collage that attempts to make sense of the complicated social history of his hometown of Los Angeles while

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touching on themes of civil rights, immigration, and education. Through my research, I began to deeply admire both artists' incredible ambition in attempting to realize an entire social, cultural, or historical system in a single image. I was also inspired by their commitment to create an aesthetically powerful image that can only be achieved through an arduous process of fastidious layering and design.

Like Mehretu and Bradford, I am attempting to produce images that represent the cacophony of visual information found in the vastly expanding technological system of the internet. At the core of my work I am solely concerned with investigating my personal visual experience with the internet, using my individual viewpoint as a lens through which a deeper, more universal truth may be discovered through a connection with a viewer. I was surprised, yet delighted to find that Mehretu explained a very similar motivation when stating, "What I’m really focused on and

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trying to go after in my work is not necessarily being informed by other artists’ work. It’s about trying to understand myself. I keep going back to that, digging deeper into who I am.”¹³

After printing my final 4 Color Inversion Intaglio-Type with Maximum Capacity, I began to realize that the medium had taken on a more conceptual significance in my work. I was using a highly technological process with ImagOn as they key material, originally used to create circuit boards. I had instinctively gravitated toward a medium that symbolically represented the very kind of technological advancements I was attempting to quantify through photomontage. In this regard, the message of my work is not only contained in the subject and composition, but also the medium itself.

After this realization, I began experimenting with conceptual implications embedded in other forms of media. In a large scale diptych titled Mirrored Neurons, I set out with the goal to illusionistically blend over 200 digital images together, carefully combing over the image with an airbrush, pixel by pixel, to achieve the highest level of craftsmanship possible. I wanted to push my digital photo manipulation skills to their limit, in orders to create a pair of images that were larger in conceptual scope, and deeper in expressive vision. The title of this piece comes from what I believe to be most important phenomena produced by the human brain: the mirror neuron. A mirror neuron fires (sending information throughout the brain) both when an animal acts, and when an animal observes the same action performed by another.¹⁴ Thus, the neuron "mirrors" the behavior of the other organism, as though the observer were itself acting out that very same behavior.¹⁵ In fact, a large number of experiments using Functional Magnetic Resonance Imaging, or fMRI, have shown that certain brain regions (the anterior insula, anterior


¹⁵ Keysers, Christian. The Empathic Brain. Social Brain Press. 2011
cingulate cortex, and inferior frontal cortex) are active not only when a person experiences an emotion themselves, but also when they witness another person experiencing an emotion.\textsuperscript{16} Many neurology experts, including Christian Keysers, author of \textit{The Empathetic Brain} believe that mirror neurons provide the anatomical neurological foundation for a human being's capacity to develop feelings of empathy and compassion toward others.\textsuperscript{17}

The mirror neuron makes it possible for our brain to share an experience with others through the simple act of visual observation. It is as though by some miracle, our capacity for empathetic thought is hardwired into our brain structure. My goal in \textit{Mirrored Neurons} was to create an image that envelopes the viewers field of vision, immersing them in my aesthetic world. By doing so, I wanted to give the viewer an overwhelming visual impression of the digital chaos echoed in my dreams, in order to create a circumstance that could bring forth a feeling of mutual empathy between myself in the viewer. After over fifty hours of work in Photoshop, I had used every image in a folder comprised of 236 files to create an image with a level of depth and detail I had never previously been able to achieve. I combined subject matter from all of my aforementioned photomontages in this piece, attempting to provide a final summary of the visual echoes and dreams that provided the initial inspiration for this body of work.


\textsuperscript{17} Keysers, Christian. \textit{The Empathic Brain}. Social Brain Press. 2011
Mirrored Neurons, Diptych, C-Print, 60 x 160 in.
Because of this conceptual intent, I found it imperative for *Mirrored Neurons* to be printed digitally on a large scale. Through my experiences creating the work for this thesis, I had cultivated a passion for the non-toxic printmaking process, and the aesthetic beauty one can achieve with a 4 Color Inversion Intaglio-Type. The new images I had created for *Mirrored Neurons*, however, seemed to require another aesthetic entirely. On the screen, the image was so overwhelming that it seemed to be begging for the inert digital slickness that only an inkjet print could provide. It was a surreal experience, finding myself bringing files to a professional printer after having spent so much time in the printmaking studio. However, I believe a digital inkjet print was the only choice for the conceptual message I wanted to send to my viewer. I wanted the viewer to know these images came directly out of my computer, so that they would immediately begin to think about their experiences with digital technology when seeing the work for the first time. I hope that the overwhelming impact of *Mirrored Neurons* will provoke the viewer to recognize how chaotic our digital culture has become.

After *Mirrored Neurons*, I felt the need to explore a new medium entirely, taking a break from Photoshop. I naturally gravitated to video editing, using a similar layering process that I had developed for my photomontages, but now, within moving images. *Infinite Assemblage* is my first successful attempt in creating a motion picture representation of the visual echoes that had initially inspired *Hypercage*. Several translucent videos play simultaneously while being blended into each other at different rates resulting in a chaotic, multilayered visual experience. The beginning and end of the videos are symmetrical, and are designed to be looped endlessly, representing the infinite progression of technological advancement. *Infinite Assemblage* marks the exciting beginning of an exploration into new aesthetic territory for my artwork.
Infinite Assemblage, Digital Video. Detail 1.

Infinite Assemblage, Digital Video. Detail 2.

Infinite Assemblage, Digital Video. Detail 3.
Conclusion

The artwork produced for this thesis is an exploration of how digital technology effects our visual perception of reality. Through a combination of digital photomontage, printmaking, and digital video editing processes, I believe that I was successful in creating images that revealed the ongoing battle between our digital and physical worlds through the lens of my own perception. By guiding the viewer through a progression of aesthetically overwhelming imagery, I hope to express a subjective truth about the complicated nature of digital visual culture as a whole. Finding truth in the nature of any human experience, however, is often a lofty goal, one which requires much more research and artistic development for my work to achieve.

Each collection of source images used for my photomontage work presented their own unique set of challenges, the results of which were not always successful. In the wake of the seven works selected for this thesis were dozens of failed experiments and false starts. Throughout my creative process, though, I have always noticed a helpfulness in failure, as each unsuccessful piece helped to guide me in the right direction. Despite occasional setbacks, through my attempts to develop

*Machine of Progress*, Laser print mounted on panel, charcoal, acrylic, 32 x 50 in.
artistic voice in photomontage I cultivated a deep love for creating digital art. I found it refreshing, to explore more contemporary image making techniques with digital photomontage after receiving a thorough classical training in drawing and painting in my undergraduate career. Robert Rauschenberg explains a likeminded fondness for experimentation by stating, “I like seeing people using materials that one is not accustomed to seeing in art because I think that has a particular value. New materials have fresh associations physical properties and qualities that have built into them the possibility of forcing you or helping you do something else. I think it is more difficult to be constantly experimental in paint.” I am excited to have the opportunity to experiment with photomontage work in an attempt to create new ways of expressing my artistic vision in the future.

Through the work created for this thesis, I realized that there are many intricate connections between art and technology. Whenever a new technology is developed such as oil paint, photography, or video, artists find ways to use them as a means of personal and cultural expression. Artists manipulate, augment, and transform not only the technology itself, but perhaps more importantly, our ability to understand it. The internet, in this regard, has proven to be a seemingly endless source of inspiration for my work, conceptually and aesthetically. Since completing the work for this thesis, I have created a new body of over twenty photomontage works entitled *Delusions and the Cycle of Samsara*, each one representing a small step in my evolution as an artist. Evident in large scale black and white works like *Tectonic Shift* and the *Machine of Progress* I am currently attempting to draw upon broader themes of technological progression through a more refined process of illusionistic photomontage. Through the body of work created for this thesis, I have cultivated a personal imperative to continue making artwork about technological advancement. I believe it is of the utmost cultural importance for artists to expand our emotional understanding of new technologies, so that we may cultivate the wisdom to use innovation as a means to develop a more compassionate and peaceful society.
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