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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

The Treachery of Imaging

By

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Table of Contents

	Abstract	2
I.	Introduction	3
II.	Approach	6
III.	Soft Terms	8
IV.	Terms and Context	10
V.	Media	21
VI.	Process	22
VII.	Context, Reflection, and Relationships	31
	Works Cited	43
	Images	45

Abstract

“The Treachery of Imaging” is a conceptual exploration of digital media’s translational nature, a recognition of its ubiquity in our visual culture, and its fallibility. This work is an experiment in process; the dissection of a workflow for the purposeful obfuscation and destruction of digital imaging technology in opposition to its commonly held status as a scientifically accurate measurement tool; or as Paul Gsell referred to it, “an unimpeachable mechanical witness.”

Through reflection, reference, reiteration, repetition, and the construction of algorithms “Treachery” is a process-oriented body of visual work, a documentation of this process, presentation, and context created in the midst of a cultural shift toward absolute digital presence in every facet of communication.

The pixel and its sum compositions dominate our field of vision as consumers, inform and limit our capabilities as visual artists and graphic communicators. Sensors and output devices to capture and translate the physical world have become almost solely reliant upon particularly controlled circumstances, limited and profoundly represented by digital technology. Yet, in its midst, our culture is either unaware of these “translations” of media or wilfully ignorant to its impact on our ways of seeing and interpreting imagery.

The visual components of “Treachery” (presented in its gallery exhibition) are a balance of abstraction and representation born of translation faults in digital imaging technology, its glitches, and limitations. This work (as a whole) intends to enlighten the viewer/reader to such common technology by elaborating upon its powerful ability but limited, granular (pixel-based) nature. It poses and explores the question, “How do we ‘see’ in a visual landscape processed almost entirely by digital technology?” and “How can it affect our processes of creation?”

I. Introduction

This document is a requirement of attaining a Master's Degree of Fine Arts at the Rochester Institute of Technology. It is intended as a written companion to the larger requirement: a culminating exhibition of visual art. Its function is to provide a clarity of thought, process, and critique for the efforts leading up to and following the exhibition.

In my view, the exhibition and this document must be linked in order to fully understand and appreciate the work. I feel that neither the exhibition nor this text should be considered, apart from one another, a complete unit. Though I cannot recreate the experience of an installed exhibition in this text, I have provided reproductions of its images as reference.

This view of equally linking an essay with an exhibition originates from another - a view that the processes I have undertaken in the creation of the objects featured in this exhibition cannot be considered apart from it and fully understood. This is a view not shared by all artists - and one that I do not blanket-ly apply to all of my visual works. I will address this concept at length in a later portion of the text.

As such, these forms share a title. Like this document, the title (and any exhibit's title, in my view) should be seen as a communications supplement. Again, it should be linked to the visual artifact that it references. It bears meaning and delivers context that this artifact alone cannot.

"The Treachery of Imaging" is a reference to a work by René Magritte, "La Trahison des Images"¹ (most frequently translated as "The Treachery of Images"). It is an image familiar to popular culture. The small 23^{3/4} x 31^{15/16} inch oil painting on canvas depicts a common, brown tobacco pipe suspended against a solid, cream-colored ground. Below the pipe, in cursive, is the text "Ceci n'est pas une pipe." (translated as "This is not a pipe."). Magritte's intention is to illustrate that this object, the painting he has produced, is not a pipe; but, merely a depiction of a pipe. It is a statement that an image of an object, a visual representation of an object, is not the object itself.

¹ Magritte, René, "The Treachery of Images (This is Not a Pipe) (La trahison des images [Ceci n'est pas une pipe])," LACMA Collections, <http://collections.lacma.org/node/239578> (accessed March 28, 2014).

This is akin to Alfred Korzybski's assertion that "the word is not the thing²" and "the map is not the territory."³

These are abbreviated statements intended to illustrate an assertion for the separation of a signifier from its signified - that the signifier, the word, is an abstraction and not the thing itself. A model, or a map, is not to be confused with the territory.

An image - a painting, a photograph, an illustration - just like words, can be taken as a model of sorts; a map.

"Imaging" originated as a term used to describe the process of representing something symbolically with an image. Magritte "imaged" a pipe to produce his famous painting. Few people use this term for this meaning, instead employing more obvious, process- and media-related terms such as "painted," "sculpted," "photographed," etc. when referring to an act of image making.

Where the term "imaging" is used most often today is when it carries the following definition: "The technique or practice of creating images of otherwise invisible aspects of an object⁴" and then most often in the context of "imaging" technology. Examples of this include, but are not limited to: digital imaging, medical imaging, radar and infrared imaging.

In my choice of a title for this body of work, I intend to reference all of these meanings of the term "imaging" in my play on words with Magritte's title as its base. "The Treachery of Imaging," is an exploration of the processes, nuance, failures and faults of common imaging technology. This work especially focuses on "new" digital imaging technology: digital photography, videography, image scanning and processing, digital photo manipulation (e.g., Adobe Photoshop), image delivery technologies (pixel-based displays), and digital printing processes.

² Korzybski, Alfred, and Russell Meyers, *Science and Sanity: An Introduction to Non-Aristotelian Systems and General Semantics*, 4th ed. (Lancaster, 1973), 222.

³ Korzybski, Alfred, and Russell Meyers, *Science and Sanity: An Introduction to Non-Aristotelian Systems and General Semantics*, 4th ed. (Lancaster, 1973), 58.

⁴ Wiktionary contributors, "Imaging," Wiktionary, <https://en.wiktionary.org/wiki/imaging> (accessed March 28, 2014).

This exploration of processes and translations between processes is meant to be taken as commentary (like Magritte's and Korzybski's) on our cultural dependence upon the ability and accuracy of these technologies to represent something akin to Jacques Lacan's notion of "the real." It is my personal observation that many people implicitly trust the abilities of these technologies to accurately represent, through measurement and reproduction, reality. Digital imaging technologies further enable our culture to "confuse models of reality with reality itself," perhaps even catalyzing our faith in these models to deliver a "new" or alternative reality?

II. APPROACH

I have found that my approach to image-making differs significantly from that of many of my peers in fine art. My work is created from a theoretical standpoint, as an exploration of media dissection. I do not set out with an intended picture or effect in mind. As a student of art history, I value awareness of context for my resulting imagery and strive to find its relationship to the work of my peers. Yet, my work is not intentionally or directly generated in response to a visual context. It is not motivated or consciously driven by existing imagery.

I am most inspired by the process and culture of digital imaging technologies, drawing significant inspiration from workflows and tools employed most commonly in related, but more “commercial,” fields. These include graphic design, digital illustration, photographic manipulation, data visualization, and computer programming. I refer to, and most directly associate with historical works created in this vein but adopted in the context of “fine” art. I cite the aforementioned work by Magritte as an example.

Compared with many of my peers, I behave with a more dissective and clinical approach to the media itself. From my history as a graphic designer and programmer, and my studies in computer science, I am intimately aware of the underlying technologies inherent in the creation of digital images and seek to experiment with them - most particularly the notion of translating methods and processes from digital sources (unreadable or unrecognizable by humans) into an analogue media (that which is easily recognizable by humans).

My interests lie in building systems/processes/algorithms which take as their input source, images - then pass these images along, pulling them apart and reconstructing them again, translating them through a myriad of technologies. This is my attempt to create a digital equivalent of “Chinese Whispers⁵” or “Telephone” with the aim of illustrating the fallibility of technology, in a culture where it inspires an almost

⁵ Wikipedia contributors, "Chinese whispers," Wikipedia, The Free Encyclopedia, https://en.wikipedia.org/wiki/Chinese_whispers (accessed March 28, 2014).

innate, ubiquitous trust.

This is not to say that I do not take great aesthetic interest in the resulting work. It is fair to say that I seek the most aesthetically appealing results as a result of my process - tweaking it frequently to obtain engaging and appealing images while attempting to maintain the integrity of its purpose.

III. Soft Terms

The terminology of discourse on the visual arts is nuanced and complex - most especially that of “new media” or “new forms” - an area involving media which is invented, evolves, disappears and reappears at a rapid pace. So, to be clear in my meaning, I feel that I must begin by outlining some terminology, starting with “soft” terms and concluding with those technical in nature.

I would like to make a distinction early between what I will refer to as an “object(s)” or its “form(s), and what I will refer to as “work(s).” I will adhere to this distinction throughout - and have already depended somewhat on this in my introduction.

These are all terms that any student of or practitioner of visual arts will undoubtedly recognize. They are not uncommonly used to in dialogue on the subject in the form of artists’ statements, art historical writing, textbooks, and other master’s theses.

I find the terms (“object” and “work” especially) are often used inconsistently and loosely; interchanged as synonyms. This is especially the case conversationally or in critique. It is for this reason and another that I will soon introduce (a process-oriented approach), that I feel the need to specify my meaning(s).

When referring to “form” I do not mean it in the sculptural sense. The “form” of this series is a collection of chromogenic (or “c-type”), two-dimensional prints produced by a Durst Lambda photographic printer. These are commonly distinguished as “digital” c-type prints but can (technically) be referred to as simply “c-type” prints.⁶

These prints are mounted to a white, 1/8” thick, rigid, PVC-foam board (known as Sintra[®]). They are then coated with a ultraviolet light resistant laminate. They are presented unframed and hung on a wall with velcro backing to achieve a seamless,

⁶ I have chosen not to use “digital c-type” as the identifying the media of the objects in this series but refer to them, instead as “c-type” prints. I will elaborate upon this decision later in the “process” chapter.

floating appearance.

This combined form (a c-type print, its mounting material, and laminate) coupled with its method of presentation (in this case, hanging on the gallery wall) constitute an “object.” This term is meant to be a clinical way of describing a physical “item” and its location in space, installation, or presentation. It may also be thought of in the context of a “product” or “piece” – an end-result of an artistic process.

The term, “work” references the object in addition to its process of creation. It is intended to reference a deeper sense of purpose than a simple object or product can provide a viewer without such context can provide when presented alone as an image.

A common example of “work” (for my purposes) can be found in Jackson Pollock. Many art historians do not separate Pollock’s paintings (their physical manifestations) from their process of creation or even ideation. His paintings and process are collectively referred to as “works.” They encapsulate his thought processes which originated a way of painting (a process) by which Pollock created an object (a painting that hangs upon a gallery wall). Such is my philosophy and way of speaking here in this text.

With the “soft” terminology aside, an understanding of “Treachery’s” concepts also necessitates an understanding of common media terms and processes, both digital and analog. While much of this is already a part of our cultural vernacular, I will outline a number of media terms for the sake of clarity and also for its usefulness as a tool in outlining the processes used in the creation of “Treachery.” Provided are relevant dictionary definitions followed by an elaboration of context relating it specifically to my work. These terms build upon one another and their order presented is somewhat parallel to my process.

IV. Terms and Context

*Digital*⁷

4: of, relating to, or being data in the form of especially binary digits <digital images> <a digital readout>; especially : of, relating to, or employing digital communications signals <a digital broadcast> — compare analog

7: electronic <digital devices>; also : characterized by electronic and especially computerized technology <the digital age>

This term is, as stated above, most often associated with computerized application. This is a very limited view - but understandable. Digital information - as it is most often presented is represented in binary, a sequence of ones and zeroes not easily parsed by humans. This, however, is the “language” of computers.

I find it a rather poetic notion that we have invented and continue to build systems which “speak” and “understand” in binary (digital) yet must translate from their “native tongue” in order to be processed by human beings. While a technological necessity, it is no less of an engaging notion.

With the ubiquity of this technology in our lives today, nearly every non-naturally occurring image that meets our eye has been (at one time) translated to and from an array of ones and zeros. It is represented as a stream of information which would make no sense to us delivered as raw data. Technically, even the pure string of ones and zeros constituting any information is ironically also delivered to us represented as a digital image. The observation of this curiosity is at the driving core of my work on “The Treachery of Imaging.”

*Imaging*⁸

3a : to create a representation of; also : to form an image of <imaged Jupiter's rings> <image the

⁷ Merriam-Webster, "Digital," Merriam-Webster.com, <http://www.merriam-webster.com/dictionary/digital> (accessed March 26, 2014).

⁸ Merriam-Webster, "Imaging," Merriam-Webster.com, <http://www.merriam-webster.com/dictionary/imaging> (accessed March 26, 2014).

bone using X-rays>

3b : to represent symbolically

I addressed this in the introduction from another source, pointing out that one accepted definition is “The technique or practice of creating images of otherwise invisible aspects of an object.” I find it amusing and somewhat ironic that the term “imaging” has come to mean two somewhat disparate things; one literal and the other figurative. It is the technical process of capturing an accurate representation of something (especially in the context of medical imaging) that may not be normally visible. Yet, it is also taken to mean a symbolic representation. There is a juxtaposition of the real and the imagined in both. There is an imposition of accuracy and measurement with the “unseeable.”

There is a connotation to the term “imaging” that is scientific in nature, especially in the sense of medical imaging. This is obvious in the context of an academic institution such as the Rochester Institute of Technology, which, in most of its communications involving the word “imaging”, it means a program in the sciences or engineering with an aim to capture and process images for research purposes and application requiring a precise degree of accuracy.

My choice of this term in my title is deliberate, with the aim of carrying that irony in through this series. One agreed upon definition and context somewhat undermines the other - reinforcing my thesis that “reality” subjected to digital processes and imaging suffer from the potential of being “lost in translation.”

*Digital Imaging*⁹

Digital imaging or digital image acquisition is the creation of digital images, typically from a physical scene. The term is often assumed to imply or include the processing, compression, storage, printing, and display of such images.

It is a personal observation that “imaging” and “digital imaging” are used nearly interchangeably in most contemporary contexts. I include this distinction here only to

⁹ Wikipedia contributors, "Digital Imaging," Wikipedia, The Free Encyclopedia, https://en.wikipedia.org/wiki/Digital_imaging (accessed March 26, 2014).

point out that my processes are nearly, exclusively digital in nature.

*Raster*¹⁰ (Graphics)

a scan pattern (as of the electron beam in a cathode-ray tube) in which an area is scanned from side to side in lines from top to bottom; also : a pattern of closely spaced rows of dots that form an image (as on the cathode-ray tube of a television or computer display)

All (current) forms of digital representation are raster in some way, shape, or form - rows and columns of pixels. This includes even print technology as output directly from a computer. Raster graphics is currently the only viable way to display, output, and capture imagery. There is only one other form of digital imaging and that is vector (defined below) - but even vector images must be translated to raster for display and output purposes.

*Resolution*¹¹

6a : the process or capability of making distinguishable the individual parts of an object, closely adjacent optical images, or sources of light

6b : a measure of the sharpness of an image or of the fineness with which a device (as a video display, printer, or scanner) can produce or record such an image usually expressed as the total number or density of pixels in the image <a resolution of 1200 dots per inch>

*Pixel*¹²

1: any of the small discrete elements that together constitute an image (as on a television or computer screen)

2: any of the detecting elements of a charge-coupled device used as an optical sensor

Most digital images are made of pixels - and thus possess a quality known as resolution which are referred to as pixels-per-inch (PPI) or “pixel density” for on screen images and dots-per-inch (DPI) for printed images. Most conflate PPI with DPI - but the

¹⁰ Merriam-Webster, "Raster," Merriam-Webster.com, <http://www.merriam-webster.com/dictionary/raster> (accessed March 26, 2014).

¹¹ Merriam-Webster, "Resolution," Merriam-Webster.com, <http://www.merriam-webster.com/dictionary/resolution> (accessed March 26, 2014).

¹² Merriam-Webster, "Pixel," Merriam-Webster.com, <http://www.merriam-webster.com/dictionary/pixel> (accessed March 26, 2014).

presentation media is distinct for these. In print work there are no pixels. Dot in the term DPI refers to a droplet of ink with a singular color. These mechanically produced prints emulate screen technology by outputting grids of these dots in the same way that a screen arranges pixels.

Photographer Roger Clark's calculations¹³ tell us that the human eye is able to detect around 560 dots per inch (for photographic prints). He has also conducted tests in which subjects demonstrate the ability to arrange prints from the highest to the lowest DPI correctly¹⁴.

*Vector Graphics*¹⁵

Vector graphics is the use of geometrical primitives such as points, lines, curves, and shapes or polygons—all of which are based on mathematical expressions—to represent images in computer graphics. Vector graphics are based on vectors (also called paths or strokes), which lead through locations called control points or nodes. Each of these points has a definite position on the x and y axes of the work plane and determines the direction of the path; further, each path may be assigned a stroke color, shape, thickness, and fill.

This term is defined here merely as a foil to raster graphics. Though I have regularly employed vector graphics applications in my graphic design career, artistic endeavors, and in experiments during graduate studies, these processes are not present in work for "Treachery." An understanding of vector graphics as an alternative to raster graphics is, however applicable information. Vector graphics are a mathematical form of imagery. They are extremely precise and can be made to emulate the appearance of photographic imagery. They cannot, however, be used to accurately represent the capture of photographic imagery. All of our existing imaging technology is raster. Even vector images must be translated into raster for display purposes.

¹³ Clark, Roger, "Resolution of the Human Eye," Clarkvision Photography, <http://clarkvision.com/articles/eye-resolution.html> (accessed March 28, 2014).

¹⁴ Samples provided to test subjects were 150, 300, 600 and 600 DPI.

¹⁵ Wikipedia contributors, "Vector Graphics," Wikipedia, The Free Encyclopedia, https://en.wikipedia.org/wiki/Vector_graphics (accessed March 26, 2014).

*Photography*¹⁶

the art or process of producing images by the action of radiant energy and especially light on a sensitive surface (as film or an optical sensor)

*Digital Photography*¹⁷

Digital photography uses an array of electronic photodetectors to capture the image focused by the lens, as opposed to an exposure on photographic film.

Photography is so ubiquitous a technology that its meaning is easily taken for granted. Most interesting to my work, and to its application as an imaging technology, is that it is “light-based.” At the most granular level, photography is a measurement of the qualities of light - and its representation emulating, in various media, how the human eye perceives imagery. Digital photography is distinguished by its electronic nature.

*Film*¹⁸

3b (2) : a thin sheet of cellulose acetate or nitrocellulose coated with a radiation-sensitive emulsion for taking photographs

4: motion picture

*Video*¹⁹

2 : videotape: as

2a : a recording of a motion picture or television program for playing through a television set

2b : a videotaped performance of a song often featuring an interpretation of the lyrics through visual images

3: a recording similar to a videotape but stored in digital form (as on an optical disk or a computer's hard drive)

The terms “film” and “video” are often used mistakenly, interchangeably. There

¹⁶ Merriam-Webster, "Photography," Merriam-Webster.com, <http://www.merriam-webster.com/dictionary/photography> (accessed March 26, 2014).

¹⁷ Wikipedia contributors, "Digital Photography," Wikipedia, The Free Encyclopedia, https://en.wikipedia.org/wiki/Digital_photography (accessed March 26, 2014).

¹⁸ Merriam-Webster, "Film," Merriam-Webster.com, <http://www.merriam-webster.com/dictionary/film> (accessed March 26, 2014).

¹⁹ Merriam-Webster, "Video," Merriam-Webster.com, <http://www.merriam-webster.com/dictionary/video> (accessed March 26, 2014).

are a couple of distinctions to make relative to my work. As a medium, film is a completely analogue and chemical process. Film photography (for still, or moving pictures) need never involve a digital process.

The second distinction is that a film (a motion picture) can be distributed on a number of different media; digital or analogue.

*Motion Picture*²⁰

: a series of pictures projected on a screen in rapid succession with objects shown in successive positions slightly changed so as to produce the optical effect of a continuous picture in which the objects move

A motion picture is simply a series of moving images in any media.

*Camera*²¹

: a device that is used for taking photographs or for making movies, television programs, etc.

*Scanner*²²

one that scans: as

c : a device that scans an image (as a photograph) or document (as a page of text) especially for use or storage on a computer

Scanner (in relation to computing)

In electronic imaging, a peripheral device that allows for the conversion of flat art, photographic prints, or transparencies into digital data that can be accessed by photographic imaging technology.²³

In computing, an image scanner—often abbreviated to just scanner, although the term is ambiguous out of context (barcode scanner, CAT scanner, etc.)—is a device that optically scans

²⁰ Merriam-Webster, "Motion Picture," Merriam-Webster.com, <http://www.merriam-webster.com/dictionary/motionpicture> (accessed March 27, 2014).

²¹ Merriam-Webster, "Camera," Merriam-Webster.com, <http://www.merriam-webster.com/dictionary/camera> (accessed March 26, 2014).

²² Merriam-Webster, "Scanner," Merriam-Webster.com, <http://www.merriam-webster.com/dictionary/scanner> (accessed March 26, 2014).

²³ Peres, Michael R., *The Focal Encyclopedia of Photography: Digital Imaging, Theory and Applications, History, and Science*, 4th ed. (Amsterdam: Elsevier/Focal Press, 2007), 433.

images, printed text, handwriting, or an object, and converts it to a digital image. Commonly used in offices are variations of the desktop flatbed scanner where the document is placed on a glass window for scanning. [...]

Modern scanners typically use a charge-coupled device (CCD) or a Contact Image Sensor (CIS) as the image sensor.²⁴

“Camera” is a broad term for a growing number of devices - especially digital devices. For my purposes, a scanner is also a camera - albeit one that does not operate in the same “camera-like” manner in which we have become accustomed.

In my work I employ a digital video camera and a flat-bed scanner to produce moving and still images. Their specific qualities lend themselves to translational glitches which are magnified in the process.

*Charged-Coupled Device (CCD)*²⁵

A charge-coupled device (CCD) is a device for the movement of an electrical charge, usually from within the device to an area where the charge can be manipulated, for example conversion into a digital value. [...]

The CCD is a major piece of technology in digital imaging. In a CCD image sensor, pixels are represented by p-doped MOS capacitors. These capacitors are biased above the threshold for inversion when image acquisition begins, allowing the conversion of incoming photons into electron charges at the semiconductor-oxide interface; the CCD is then used to read out these charges. Although CCDs are not the only technology to allow for light detection, CCD image sensors are widely used in professional, medical, and scientific applications where high-quality image data is required.

Nearly all digital photographs are captured via CCD. I would posit that most photographs across all media are captured via CCD today. This is based upon the ubiquity of digital technology in the photography industry. “The poetic notion” I presented earlier about our information being stored in “computer language” extends to our photographic images as well.

²⁴ Wikipedia contributors, "Image Scanner," Wikipedia, The Free Encyclopedia, https://en.wikipedia.org/wiki/Image_scanner (accessed March 26, 2014).

²⁵ Wikipedia contributors, "Charged Couple-Device," Wikipedia, The Free Encyclopedia, https://en.wikipedia.org/wiki/Charge-coupled_device (accessed March 26, 2014).

The CCD was a powerful invention. It allowed us to “capture” images of the “real” world and import them into computers for representation and processing. In early digital photography the grid of pixels was obvious. The first digital photograph was a mere 100 x 100 pixels²⁶ - a thousand pixels constituting one image. That may sound like a lot - but refer back to the resolution of the human eye mentioned earlier. According to this number (560) a 100 x 100 pixel image would need to be printed as a mere 0.179 inch square to “hide” its pixels from the human eye. Today we refer to a camera sensor’s capabilities in megapixels (one million pixels). There are cameras available today with over 80 megapixels. At 80 megapixels, one could print a 560dpi image up to roughly 63 x 63” before the human eye could discern a pixel. That is an impressive leap for a scant 39 years of CCD development.

The flatbed scanner used in my work captures images up to 11x17” at 4800ppi. The digital video camera, however is only capable of capturing 1920x1080 pixel images at 72ppi. This converts to 0.4 x 0.225 inches at 4800ppi. Over 2,000 stills from this video camera would fit within a single capture (capability) of the aforementioned flatbed scanner.

*Screen*²⁷

4b : the surface on which the image appears in an electronic display (as in a television set, radar receiver, or computer terminal); also : the information displayed on a computer screen at one time

Like CCD technology, a digital screen is also bound by statistics like ppi. Before the introduction of Apple’s “Retina” displays, color, digital screens available to the consumer market were mostly at a pixel density of 72ppi. The size of these pixels of course, varied depending on the size of the screen. The liquid crystal display used in the processing of my work was small, 72ppi at roughly 13 inches diagonal at a 4:3 ratio.

²⁶ Edwards, Benj, "Looking Back at 35 Years of the Digital Camera," Macworld, <http://www.macworld.com/article/1156514/35yearsofdigitalcameras.html> (accessed March 28, 2014).

²⁷ Merriam-Webster, "Screen," Merriam-Webster.com, <http://www.merriam-webster.com/dictionary/screen> (accessed March 27, 2014).

*Print*²⁸

5a (1) : a copy made by printing (2) : a reproduction of an original work of art (as a painting) made by a photomechanical process (3) : an original work of art (as a woodcut, etching, or lithograph) intended for graphic reproduction and produced by or under the supervision of the artist who designed it

5c : a photographic or motion-picture copy; especially : one made from a negative

I find “print” a very intriguing and difficult term in the context of fine art. The whole notion of “original work” and the use of the term “copy” in its definition is (in my view) turned completely upside-down by digital technology. This sensitivity is present in my thinking of process and production for this series.

Definition 5a3 is the closest to matching the output of “Treachery.” These are works which I consider original, handled personally in tandem with many different machines, technicians, and processes until its final output, as the “object”, which is a one-of-a-kind print (a digital c-type). However, I take some issue with the term “designed.” I will elaborate in the chapter on “process.”

*Chromogenic Color Print*²⁹

Chromogenic color prints are full-color photographic prints made using chromogenic materials and processes. These prints may be produced from an original which is a color negative, slide, or digital image. The chromogenic print process was nearly synonymous with the 20th century color snapshot. It is the most common type of color photographic printing.

*Offset Printing*³⁰

Offset printing or web offset printing is a commonly used printing technique in which the inked image is transferred (or "offset") from a plate to a rubber blanket, then to the printing surface. [...]

Many modern offset presses use computer to plate systems as opposed to the older computer to film work flows, which further increases their quality.

²⁸ Merriam-Webster, "Print," Merriam-Webster.com, <http://www.merriam-webster.com/dictionary/print> (accessed March 26, 2014).

²⁹ Wikipedia contributors, "Chromogenic Color Print," Wikipedia, The Free Encyclopedia, https://en.wikipedia.org/wiki/Chromogenic_color_print (accessed March 28, 2014).

³⁰ Wikipedia contributors, "Offset Printing," Wikipedia, The Free Encyclopedia, https://en.wikipedia.org/wiki/Offset_printing (accessed March 28, 2014).

*Inkjet Printing*³¹

Inkjet printing is a type of computer printing that creates a digital image by propelling droplets of ink onto paper, plastic, or other substrates. Inkjet printers are the most commonly used type of printer, and range from small inexpensive consumer models to very large professional machines that can cost tens of thousands of dollars, or more.

These three print types represent the most common digital processes used today. Chromogenic, (also known as “c-type” or “type-c”) is the most common type of color photographic printing. This is within the context of the photographic arts - not the advertising and manufacturing industry. Inkjet prints (known by a number of various terms including: giclée, pigment print, etc.) are the most common type of color prints across most media when quantities are low. Offset printing is the workhorse of print image making. It is common for mass printing jobs (magazines, books, national mailings, etc.).

In the context of fine art, as I have mentioned earlier, c-types are (or were) the most common photographic medium. This is being challenged today by inkjet printing. Offset is almost never utilized in this context as its return on investment is very low unless quantities exceed thousands. In all three media, processes are most often from a digital source. Combined, it is safe to say that on screen or in print, most non-naturally occurring, or mechanically produced imagery in our culture has at some point been stored in the form of bits and bytes - unrecognizable to the human eye - requiring a translation for our consumption. This observation is, as I have already mentioned, fundamental to my work.

*Algorithm*³²

: a procedure for solving a mathematical problem (as of finding the greatest common divisor) in a finite number of steps that frequently involves repetition of an operation; broadly : a step-by-step procedure for solving a problem or accomplishing some end especially by a computer

³¹ Wikipedia contributors, "Inkjet Printing," Wikipedia, The Free Encyclopedia, https://en.wikipedia.org/wiki/Inkjet_printing (accessed March 28, 2014).

³² Merriam-Webster, "Algorithm," Merriam-Webster.com, <http://www.merriam-webster.com/dictionary/algorithm> (accessed March 28, 2014).

The concept of an algorithm is another core element of my work on “Treachery” - so much so that I considered trying to work it into a subtitle. I was introduced to this concept in my studies of computer science as an undergraduate. The manner in which one could organize functions and processes into a series of steps to build a recursive or extremely complicated function or process - with consistent outputs - fascinated me. With “Treachery” I have applied this to art-making, setting up systems of creation, which could theoretically be carried out in my absence with consistent results. My view of “object” vs. “work” stems from this notion that my most significant artistic imprint upon this series is the creation of its algorithm - its process. The art I represent is more about the algorithm and its results in tandem, than simply an object hanging on a wall.

V. Media

To my point about distinguishing between the terms “work” and “object,” I prefer not to identify the media of “The Treachery of Imaging” with a singular term. However, this is generally a necessity in an exhibition - thus the point of this aside. The title cards displayed below the individual works in the series read “digital c-type” and the exhibition was billed as works of “photography.”

I chose “photography” because it accurately describes the medium of the objects being presented together.³³ I identified each object separately as “digital c-type” photographs as that is the most accurate and focused identification of the individual objects presented. As I understood my audience to be primarily faculty and students from the university, known internationally for its photography program³⁴, I knew I could more certainly count on their understanding of the process involved in a “digital c-type” as opposed to a more general audience. My hope was that this would aid in better communicating my complex intentions with the work, if only subtly and slightly.

While these are fair labels for the resulting objects, and are accessible to the viewer(s at hand), I feel that they do not fully reflect the necessary complexity to fully appreciate the work. Again, this is to my point of discussing the exhibition as a total sum of its presence as well as its process. A more accurate, yet a somewhat less descriptive identification may have been “mixed media” but that is far too vague and not evident in the physical objects presented.

³³ Yet, I don’t necessarily self-identify as a “photographer.”

³⁴ U.S. News & World Report, “Photography,” Best Programs, <http://grad-schools.usnews.rankingsandreviews.com/best-graduate-schools/top-fine-arts-schools/photography-rankings> (accessed March 28, 2014).

VI. Process

“The Treachery of Imaging” is a series of works sharing a common process, philosophy of creation or ideation, and exploration of media. As I have just mentioned, I consider this process, the algorithm, the core of the artistic endeavor. It is informed by the qualities of each process and media in its chain of steps. These were the deliberate decisions made on my part to illustrate the concepts of translation fallibility I discussed earlier in the text. This chapter is devoted to describing this process, in order - the heart of the work.

Digital Video Portraits

I recruited a number of volunteers for what I described as video portraits. I seated each subject against a solid, black backdrop and lit them from three angles with studio lighting.

The choice of backdrop allowed me to isolate the photographic subject, changing their positioning on the screen in a final, digital composite on the field without having to recreate, capture and recompose the original shoot.

I asked my subjects to stay relatively still in their pose - but still conduct conversations with me. The subject of discussion was unimportant to my process, as audio recording was discarded and unnecessary. My goal here was to create a motion picture with areas of contrast both in lighting as well as in movement. The subject's expressions changed slightly with time, their eyes moved, flickered and blinked, their mouths worked to form the words that formed our conversations. Their shoulder and head positions remained relatively the same.

From these recordings, I created in digital video editing and compositing software³⁵ a somewhat seamless loop (generally five to ten minutes in length). The purpose of this particular output was to allow for infinite playback in my next mode of

³⁵Apple's Final Cut Pro

capture, a digital flatbed scanner.

Compositing

From experimentation in the next phase, I discovered in early tests that results were much more aesthetically appealing if a robust gamut of color was present in the video portrait. As this range of color was completely dependent upon the subjects, skin tone, hair color, and choice of wardrobe resulting images often presented a narrow gamut. I made the decision to correct this, not by asking my subjects to change their appearance but to digitally add a full gamut sample overlay to the edge of the video by way of compositing.

This decision was made first as a test - but yielded unanticipated, and in my opinion, very beautiful results.³⁶

This step in the process also involved composition. The video portrait largely determined the composition of the final image, so I was very careful in this step to arrange my subjects against the field in an aesthetically appealing manner.

Playback and Scanning

It was this step in the process, which has at its core the most conceptual component - and elicited many studio visits from many, curious peers. Flatbed scanning technology, as demonstrated in the section on terms, is accomplished with a combination of CCDs, small lenses, and a sweeping motion over a flat surface. Standard photocopiers use this same sweeping motion and a similar technology. I have found that it is a common experience for one to become impatient with such a machine during its scans, inadvertently moving an item being copied in the middle of its sweep. A warping occurs in the final output as the item is moved. While most seek to avoid such distortions, it is this precise effect that I sought to replicate in my images.

The “wand” doing the scanning is moving across the subject at a constant rate of speed (which varies from machine to machine, and by the resolution it is seeking to

³⁶ I will not diverge from the ordered, step-by-step description I am delivering here but will elaborate further in the text.

capture). Along the wand is another motion, a lateral sweeping of the lens and CCD. The motion is not unlike that of reading (or “scanning”) a document, hence the common name of the machine. It sweeps from left to right, from top to bottom - or depending on the orientation of the machine, from top to bottom, left to right.

This is analogous to how we store digital data, bits and bytes are written to a file from left to right, top to bottom. Pixels are rendered on a screen in the same manner along its matrix. Rather than simply swaying a subject back and forth on the scan bed for self amusement (which many of us have done) I sought to display a moving image, a video, represented on a screen of some sort as the flat medium which the scanner would capture, scanning again from left to right, top to bottom.

I placed a liquid crystal display face down upon the scanner, attached to a computer playing back the looping video and used another computer to drive the scanning process.

Since these machines were designed for stationary images (two dimensional subjects), too much motion resulted in total abstraction. Too little motion resulted in an unappealing, static image. The most aesthetically appealing results, the most recognizable imagery came from a balance of motion and stability. The more contrast in motion, the better contrast in abstraction and representation. The more the subject moved in the course of the scan, the more the image became unrecognizable. If a subject remained completely motionless, the scanner captures a relatively similar image to the one presented on screen. The effect that I wanted to achieve was a balance of recognizable features and abstraction. Hence I made the decision to ask my subjects to remain as motionless as possible - yet carry on a discussion (allowing their faces to express restrained motion). The portions of their faces and bodies which moved became abstract, the portions which remained motionless, recognizable at a glance.

As I mentioned previously, there was one unanticipated quality of these scans that came about by way of introducing a wide color gamut: I will refer to it as “streaking” for lack of a better term. I do not have the technical qualifications, and am even unfamiliar with whom to ask, as to why this phenomenon occurs. I have also found that

it varies from manufacturer to manufacturer. It lent a quality to the images, though - an artifacting, a glitchiness, that added to and reinforced my statement and opinions on digital translation.

Bright colors (reds especially) had a tendency to be “carried” down the scan as stripes. They appear as ink would - were this an inkjet print rather than a capturing of an image. The results are evident in the final image.

Another, vital quality to note here is the resolution of scan and the quality of the screen.

Scanner Resolution Versus Screen Resolution Versus Video Resolution

I would like to pause for a moment in this process outline to discuss resolution. While the act of playing back a video on a screen, placing it upon a scanner and processing the image can be a relatively simple physical process, a lot of translation is going on with the technology. First there is the notion of this obvious absurdity - which is deliberate.

There is no reason why this should functionally, ever be necessary. Flatbed scanners prove useful when we need to translate a printed or hand made, two dimensional object into a grid of pixels for digital processing. That is its intended function. Screens are intended to give us a representation of such images. They are designed for the human eye. There were a number of important adjustments that I needed to make in order for this process to even yield an image.

First, consider the way in which light is transferred and captured in a flatbed scanner. The CCDs are adjusted in such a way that they are measuring light bounced off of a physical object - not light emitted directly from a screen or any other source. Behind the CCD is a light source directed at the subject. When you place a video screen, made of a matrix of back-lit pixels on a flatbed scanner, you will typically receive as output an overblown (almost completely white) image. This is because the CCD is adjusted to receive soft, indirect light. Pixels are like tiny flashlights pointed at their intended viewer - hence the blown out, scanned image in this case. This would obviously not do for my purposes.

There are, however, flatbed scanners which have functions and physical adjustments intended for film negatives and slide film (built specifically to be viewed with backlighting). I experimented at length with various scanning softwares and hardware which would allow me to override the scanner's settings and force it to consider my subject on the flatbed, the LCD screen, as if it were a backlit piece of film. This adjusted the CCDs sensitivity via software, accordingly so that it was capable of actually creating an image from a directly lighted (additive) source such as a video screen. This was far more difficult than I had anticipated. By design, most hardware triggers such a mode only when film is present in a special holder. This is an engineering decision, I suppose, to prevent user error. I essentially had to trick/hack the scanner's software, defeating its engineering, to accomplish my task.

Following my success in creating this functional scenario I made a number of other discoveries about the quality of a scan such as this. The color "bleeding" that I have already discussed was one. The physical presence of a mesh in the screen itself was another.

Akin to macro photography, since the resolution of the scanner was so high (4800ppi), one is able to actually see the underlying "screen-like" nature of the LCD hardware. A screen is designed, again, like the human eye. Its pixels are tightly bound together, emitting a series of red, green, and blue pulses which combine (in a "gestaltian" manner) to create a specific color. This is known as additive light or additive color. Back-lit pixels are blended together in our mind to represent a photographic image.

As a child, I experienced, a distinctive moment of visual memory - of seeing "behind the veil" in this process, prompted by sneezing into a television screen. Like many children, I had a predilection for sitting too close to (as in almost directly upon) the screen. I clearly remember my first experience witnessing those tiny droplets sliding upon the surface of the glass. Each acted like a magnifying glass, exposing pixels and their red-plus-green-plus-blue composition. It was a moment of awe. I found it fascinating enough to repeat, time and again, sometimes being scolded for dripping water intentionally upon the glass.

As an adult, it was equally fascinating to discover that a scan of an active video screen at such a high resolution results in a similar effect. Zooming in on these images in Photoshop (and later examining the prints closely) one can not only discern these individual sources of colored light - but also wires embedded in the screen's structure which allow electricity to power them. This undermines, for me, the integrity of the image being built. On screen, our eyes being bombarded by their direct light, we determine that what is being presented to us is a photographic image. It *is* a person, it *is* a funny photo of a cat from the internet, it *is* the thing that it is meant to represent - but it *is not* at the same time. These video scans were belying the actual, physical structure of the screen used to represent them, literally and figuratively magnified this point to me - adding an enormous conceptual power to the images that I had not anticipated.

Thus, this translation of imagery is even more complex than I have previously given it credit for. There is a translation of pixel density and resolution happening as well. These translations are happening through digital algorithms programmed directly into the systems.

Firstly, video captured was 1920x1080 pixels. It was squashed to fit into a resolution of 1024x768 pixels (the capability of the screen). It was then captured at a resolution of 4800ppi. A little math (since we know the physical dimensions of the flatbed scanner and the screen) tells us that this is a wild swing in interpolation. Our screen was roughly 8.5 x 6.2 inches (at a 4:3 ratio with a 13" diagonal measurement) - the same as our active scanning area. That puts a rough dpi for our screen at 120. That is about 40 pixels in our scan for every one pixel represented on screen. There is a lot of room in between those pixels on screen being captured - hence our ability to "see behind the veil" a bit at the way in which it works. It felt almost magical to make this discovery - though it is certainly logical.

My point is that there is an enormous amount of translation going on in this absurd transaction. It is not just about the curiosity of bending and warping the image - but about technical capacity, pixel density, and delivery technology.

The Resulting Digital Image

When an image is delivered through this process (by way of the scanner's output) the work toward outputting a print-ready image is not yet done.

As I had chosen digital c-type printing, I immediately converted my images from a scan to 300dpi without interpolation (rather than the monstrous and unprintable original resolution of 4800ppi). This means that the resulting images were capable of being printed at a maximum of 136 x 99 inches (roughly 11.3 x 8.25 feet). While the notion of producing work at this scale (for eye-level viewing) is exciting, this far exceeds practicality for most exhibition spaces. Therefore, I scaled them down to a more common, yet still adequately large, range of 30 to 40 inches in either dimension. This is chosen primarily for its ability to demonstrate the fine detail of the LCD's grid of wires during the scanning phase of the process, but also to highlight color vibrancy.

After this manipulation of scale, I performed color adjustment to increase vibrancy. This also highlights the aforementioned "bleed" effect. Contrast adjustments follow to ensure that the images possessed value from pure black to pure white. Both adjustments were purely aesthetic.

Print and Finishing Process

As I have already mentioned, I chose the Durst Lambda to process and output the final images for this series - digital c-type prints.

These prints are, for all intents and purposes, photographs. They are not (however) necessarily created through traditional photographic processes. The Durst Lambda, and other digital c-type printers, forgo an analog film process, depending on digital files as their source.

Like other digital printing processes, this eliminates the reliance on a camera as the origin of an image. Unlike others, digital c-type preserves the same media as analog (film) photography: an image exposed by light onto photochemical paper. Without microscopic examination, digital c-types are indistinguishable from the types of color chromogenic printing which have been available since 1942.

The decision to employ digital c-type was twofold. My intention was to create an output whose medium could not be argued as anything *but* a photograph. There are numerous debates being waged currently on the subjects of media sensitivity and technological advancement. Most rehash the question of what constitutes “real” photography. I personally feel that these debates are mostly pointless. I make a point in conversation and statements to highlight this pedantry - and my frustrated view of its dissection of an output medium for “credibility.” Digital c-type prints are c-type prints. It is plain. Again, they are barely distinguishable from any other c-type print - a cornerstone of “real” photography. Yet my view on this controversy aside, my choice of c-type prints here (as opposed to inkjet) helped me avoid getting embroiled in these debates and allowed me to instead focus on more important references.

However, the most important intent in the decision to go with this media remains its process. The Durst Lambda uses red, green, and blue lasers, fired at photosensitive paper, in a grid that is extremely similar to that of a computer screen or a CCD. With the decision to print with the Durst Lambda came another poetic notion of translation.

Color is merely our perception of light’s wavelengths. Value is our perception of light’s intensity or brightness. Our vision is completely predicated upon these two variables. Digital imaging technology seeks to recreate these values using gestalt, the propensity for the human eye to “blend” together small components into a “bigger picture.” This is how an array of pixels (those tiny points of light in a screen display) or an arrangement of dots in an inkjet print form a cohesive image with a wide gamut (the range of possible color and values). My first “behind-the-veil” moment with the water droplets on the television dissected this intent of engineering.

Somewhat like this visual phenomenon, the creation of *any* image in *any* medium (analog *or* digital) can be dissected into its manipulation of light (as rays). For my work, I have translated light rays across a number of sensitive measurement devices and through a number of interpreting output devices.

Light rays beam into a CCD (situated behind the lenses of a video camera) originating from a light bulb (consisting of gases excited by electricity), which are then bounced off a subject or model. The quality of these beams are then written

electronically, magnetically onto a computer disk in the form of a matrix of measurements. These are bits and bytes representing, numerically, a range of red, green, and blue (additive) light intensity. As a video, these matrices are multiplied exponentially to form the full, digital representation of a moving image. Fascinatingly, these images (in all digital steps) are unrecognizable as images (to the human eye, at least), until reinterpreted again by a computer algorithm.

Those digital motion pictures were then played, in a sequence beamed in real time through a collection of LCD lighting (another matrix), into the face of yet another CCD which is part of a flatbed scanner. Translations upon translations are occurring, acted out by algorithm upon algorithm programmed by different authors at different points along the short timeline of digital technology's history. These methods and process often serve purposes far different from their original conception. They serve as components in the larger whole, as a cog in a larger algorithm. Their authors may scarcely recognize their new implications. This can be viewed as yet another translation.

My choice of Durst Lambda as an output device is a mirror to the LCD's beaming of light directly into the face of the receiving CCDs. It is a reception of such light deployed by lasers, firing in combinations of red, green, and blue upon a photoreceptive surface.

It is *all* a recursive game of RGB light "tennis" - in every iteration the quality of the light changes as it passes from media to media.

Though these systems were built to be enormously precise, their errors and faults are immediately visible through these translations. Therein lies the poetry of such a "broken" process to purportedly represent "reality."

VII. Context, Reflection, and Relationships

Since this work is intended to focus and comment upon media translation in a digital age, defining its media is much more complex. “Treachery” shares this complexity with many “new media” works.

I cannot underscore enough that I view “Treachery” as a process-driven work. To understand its nature and intended purpose is to understand the journey of its varied media from inception to its exhibition.

That journey is evident in the final exhibition but is not explicitly apparent without the context I have provided. For example, one may not be able to simply view the resulting object (the chromogenic print) and accurately map the process of its creation. While this could be said of many (if not most) works of fine art, I feel that it is particularly true of “new” media or digital work.

Brush strokes, thumb prints, and chisel marks are very telling. Pixels are not. They are meant to be precise and used with that assumption by the practitioners of digital works. My purpose in “Treachery” is to challenge this notion on many fronts. I created this work with the opposite assumption. Pixels are fallible. This technology is fallible. It is obvious when we abuse the purpose of the machines upon which we too often rely for complete and utter accuracy.

I consider this written companion to the thesis as an elaboration on this concept to be paired with the final, visual work. It is as much a part of “the work” as is “the object.” “Treachery” as a series is the combination of chromogenic prints and the process of their creation relative to the history of digital imaging technology.

This document should serve as a map of the processes I have undertaken to deliver the objects which constituted the exhibition. It should serve as an elaboration of the thoughts and research which went into each step and decision made along the way. It is an expanded artists’ statement providing context necessary to illustrate a process-

oriented approach to “new” or digital media.

During the creation of this work, I have significantly changed my philosophy of creation. I once held the lofty belief that “good” and “effective” visual art could communicate completely independently of its context (creator, intention, title, process). I believed that work must be able to “stand on its own.”

I have embraced the concept of art as not simply an object separated from its inception and process - but dependent upon it. I have taken great care in the creation of this document to be as precise as possible (up to the point of this reflection) in order to give the reader a full, technical sense of the process which I have embraced to create this work. My hope is that it has not been tedious for the reader - but an honest (albeit atypical) description of my thought process for making the decisions I have made.

I feel that many of my peers, most very qualified visual artists, don't quite take this tack - but being extremely technical of nature, I could not have approached this subject in a different way. My fear for this work is that it sit alone (shown traditionally), without this context, and thus cannot speak as a cohesive unit of experimental art.

My fears are somewhat alleviated by the fact that many others are working simultaneously in this space of “new forms.”

I arrived at my thoughts as independently as one might, born of personal, practical experiences as programmer and designer, coupled with my visual, artistic expression. However, these revelations and explorations were not without parallels in “collective thought” elsewhere and owe much to other work exploring such themes.

James Bridle's essay, “The New Aesthetic” is often cited in regard to these philosophies, realizations, and thoughts. These ruminations, made two years after my thesis exhibition, are in response to similar, experimental work being done elsewhere in parallel.

Inspiration and Influence

I am obsessed with RSS (Really Simple Syndication) and other online news feed

technology. I use these systems to deliver a steady stream of curated graphics and technology news to a web reader application³⁷ and check it compulsively. These selected feeds of information, artists' announcements, exhibition information, gadget news, blog updates, etc. have collectively become my biggest influence.

The power of sifting through thousands of artists' portfolios in a mere matter of hours is unparalleled and very new to my generation of artists. I make a point of highlighting this bit of information to argue that contemporary artists are far more capable of exposing themselves to others' work than those working ten to fifteen years ago could have imagined. For this reason alone, I feel like there are far more influences to my work than I am capable of recalling at will. While I *am* able to cite specific examples, it would be impossible to capture or recall each. That in itself, the fractured, constant barrage of digital imagery, is an obvious component of many "new media" works; including my own.

This type of passive exploration, during and after creating the visual work featured in "Treachery" was a rich source of direction in collecting more intentional research and reference material for this document. Shortly after the creation of the work, I curated a group exhibition which I titled "Scripts & Systems" almost entirely from web-based sources. Both its method of curation and its themes were germane to this thesis. The call for participating artists and the short form statement for the show read as follows:

"Scripts & Systems" is an exhibition about letting go of control - even in our creative lives. It is about the relationship between people and our machines, about whom we give instruction to and whom we take it from.

It is about algorithms - the planning of algorithms and systems-creating-systems: from assembly-line robots and automated, interplanetary rovers to the robotic vacuum cleaners in our homes and the GPS orchestrating our daily commute.

Underneath this language, intended primarily for an audience unfamiliar with art

³⁷ Feedly, "Feedly," Feedly, <http://feedly.com/> (accessed June 2, 2014).

criticism and theory, lies a bit of a manifesto, a motive for the creation of my own work. Like my daily RSS routines, it is a bit passive in its influence, but powerful nonetheless. The concept of the routine and particularly the concept of algorithms are key to understanding this motivation and my fascination with these processes.

Specific artists I sought out to (and successfully) include in this show were many whose work mirror my own - either by design or simply being a part of the digital “zeitgeist” or “New Aesthetic” as Bridle calls it.

Minjeong An’s³⁸ work comes to mind most specifically - not for its form but for its origin. Minjeong creates elaborate maps of processes and systems: learning to play the piano, the human nervous and circulatory system, memory, etc.. These depictions aren’t scientific (exactly), nor are they accurate (in a mathematical or representative sense). They are very human, yet adopt a technical form: elaborate, large-scale vector illustration. I see Minjeong’s work as a sort of parallel version of my own thinking with a very different process. She takes something fragile and organic, like human memory and experience and represents it in a technical manner, “breaking” it in the process. My work leads similar, organic inputs through technology - albeit with very different aesthetic outcomes. Her professional background as a web designer is similar to my own as well. That our thinking is somewhat parallel is no coincidence in this regard.

Because of its visual similarities, I would be remiss not to mention “glitch art” - though I do not personally identify with the movement. One could easily argue - based on aesthetics and even to some extent this very document, that my work could be classified in the form. Glitch takes as its primary form the mistakes of technical, electronic, visual equipment. A recent publication, “Glitch: Designing Imperfection”³⁹ puts it this way:

Systems Fail. Errors Happen, Computers don't know what's going on. We see interesting and unusual visuals artefacts and glitches, [we] capture them! At other times we provoke them!

³⁸ An, Minjeong, "Minjeong An," Minjeong An, <http://myartda.com/> (accessed May 6, 2014).

³⁹ Moradi, Iman, *Glitch: Designing Imperfection* (New York: Mark Batty Publisher, 2009).

This feels familiar. Aesthetically, my work obviously aligns. On some basic conceptual level my work also aligns. Consider the portfolios of any number of artists represented in this book alone: John Rogers⁴⁰, Steven Silberg⁴¹, O.K. Parking⁴², Alexander Peverett,⁴³ etc.. The works of various artists on Computers Club⁴⁴ also comes to mind. Many of these artists also refer to themselves as process artists: Silberg specifically.

I remain unconvinced that subjectively my work relates directly to the movement. This is a definite nuance: a fine line - and admittedly may only be my personal distinction. Where I understand the drive behind glitch to exploit the beauty of technological imperfection and mistakes, I am more interested in exploring topics of translation between media and how these glitches affect our vision of the world and ourselves. Theirs (in my understanding) is far more related to aesthetic than concept.

Again, I have respect and admiration for glitch and its practitioners. I certainly don't mean to distinguish and exclude myself directly - but I do make a conceptual distinction, therefore, I feel that it would be unfair to cite this work as a direct reference. I identify far more directly with artists and works in line with Bridle's "New Aesthetic" for its conceptual bent. To be fair, there is an enormous amount of overlap between those groups. Another important, personal viewpoint to cite is that I feel it a bit clumsy to self-identify with a contemporary movement. It is my experience from the study of art history that these associations tend to "work themselves out" appropriately long after an artist is dead or retired.

For this reason and others, I purposefully avoid trying to make visual references to contemporary works of art. I would much rather draw from wider known, historical works such as Duchamp, Muybridge, etc. as I feel that their ubiquity lends to an accessibility not offered otherwise.

⁴⁰ Rogers, John, "John Rogers, Artist," John Rogers, Artist, <http://www.johnrogersart.com/> (accessed May 6, 2014).

⁴¹ Silberg, Steven H., "Steven H Silberg," Steven H Silberg, <http://stevenhsilberg.com/> (accessed May 6, 2014).

⁴² Parking, O.K., "O.K. Parking," O.K. Parking, <http://www.ok-parking.nl/> (accessed May 6, 2014).

⁴³ Peverett, Alexander, "Alexander Peverett," Alexander Peverett, <http://alexanderpeverett.com/> (accessed May 6, 2014).

⁴⁴ Computers Club, "Computers Club," Computers Club, <http://www.computersclub.org/> (accessed May 6, 2014).

I can, however, speak to another key similarity with artists in these movements. As is the case with Minjeong An, myself, and many others, our technical backgrounds tend to align.

I was an undergraduate, computer science student. Computer science is a field dedicated to studying the possibilities and limitation of systems, specifically digital systems. As noted in my terminology, algorithms are constructs: a set of discrete, repeatable steps to achieve a goal. Programmatic algorithms are natural for digital technology. Programming a computer is the act of creating a script (based upon an algorithm) to achieve a goal or result, no matter how benign. Algorithms are the way in which we allow computers to excel at that which what they excel the most: discrete, repeatable tasks, toward the goal of providing attractive output to spite undesirable or even impossible, menial work not suited for human beings.

Describing their work, I have found that programmers often sound (stereotypically) like artists, employing flowery language and metaphors, referencing concept and theory, citing motivation and personal style. I have been partner to many heated discussions on the topic of programming “as art.” I feel as if there is a definite validity to that claim.

When I refer to myself as a process artist; when I consider my work in this vein; or the work of other process artists (such as Pollock, who I have previously mentioned), I am combining process with product to equal a “work.” I have already established this personal distinction - but its origins are probably more germane to my point here. I am viewing this parallel to the artistry of programming. Visual, process work is the marriage of elegant and artful algorithms and their output - taking as their input theories, references, and raw imagery. This type of work is the conceptual fusion of digital and organic function.

The word “treachery” in the title of my thesis exhibition is intended to describe a newly foreseen danger. Our tools are reshaping the lens through which we see our world in unexpected ways. Translation (glitches) and resolution (unintended abstraction or blurriness) have created a “new aesthetic” - something unable to have been created

without them. Like photography, these tools were created to mimic human vision, to recreate images which would be interpreted as a vision of reality. They were created (again, like the analog camera) as a way to measure light - and recreate images with light. Unlike photography, when simplified and broken down into its constituent parts, the images become unrecognizable (or cease being visual at all - bits and bytes). They are more malleable. Their pixels (the most basic unit of the new aesthetic) cannot stand alone as images - but are merely fields of hue and value.

They are variables - a scientific unit of measurement which can be assigned values. That they are infinitely rearrangeable, like Lego building blocks - allows them to subvert the meaning of "image" in ways previously unthinkable. That they can be processed, remeasured, captured, displayed, recaptured, erased and recreated through simulation, regurgitated and inverted, means that - in an ironic way - though discrete, units of measurement, they can be subverted, simulated and faked. They embody both truth through observable, scientific, measurement and defy it by allowing themselves to be discretely altered and fabricated.

In analog photography, alteration and generation of imagery still depends on a creature with biological vision - in digital imaging it does not. Computers are capable of aesthetic feat without human expression. We have not necessarily dealt with this very well. Vision is no longer (arguably) as relative as it once was. It can be discretely measured and simulated. This is a near godlike power for creators - if not challenged by viewers.

We have managed to recreate biological vision using technology similar to the CCD⁴⁵. Imagine, given the context of our discussion thus far, the ramifications of hard wiring one's biological brain directly to a source who shares far more in common with the technologies we have discussed, compared to the "technology" with which your fellow human beings "use."

What of the fallibility of reproduction? What of glitches? What of translational errors? What of fabrication? This is not a new topic of conversation by any means - the

⁴⁵ British Broadcasting Corporation, "Bionic Eye Will Let the Blind See," BBC News, <http://news.bbc.co.uk/2/hi/health/4411591.stm> (accessed March 28, 2014).

“honesty” and “truth” of technology as compared to human perception.

Consider the following conversation between August Rodin and Paul Gsell. Rodin speaks of capturing movement in his sculpture, embodying its sense in a way that he feels is more “honest” and reflective of reality. I find Gsell’s definition of photography as an “unimpeachable mechanical witness” a particularly haunting, absolute trust of technology.

“Well, when the artist interprets movement, he is in complete disagreement with photography, which is an unimpeachable mechanical witness. He evidently alters the truth.’

‘No,’ responded Rodin. ‘It is the artist who tells the truth and photography that lies. For in reality, time does not stand still. And if the artist succeeds in producing the impression of a gesture that is executed in several instants, his work is certainly much less conventional than the scientific image where time is abruptly suspended.’⁴⁶

When I mention my peers in the arts (as above), I do so without criticism, but feel that many of us differ in ways much similar to the disagreement here between Gsell and Rodin. On the one hand, as an artist of particularly “new” media - we should refer to this as “digital” media in my opinion - I find myself constantly questioning the validity of my output. To me, it is a tool - merely a chisel, a brush, the hand. It is an enormously augmented tool. With digital technology, one has the power to create images, which to the human eye, appear to be perfect analogues to those that are “hand made” - but one does so with much greater ease. This is to most, the point of such technology.

Yet, it causes a bit of tension between those committed to traditional techniques and find them to be more “real” than their digital counterparts. I run the danger of getting sidetracked on personal opinion and experience here. I have held many debates with purists on either side of this rift and I hope that from your reading of my thoughts here you can see that I fluctuate between the two.

⁴⁶ Rodin, Auguste, and Paul Gsell, “Movement in Art,” in *Art: Conversations with Paul Gsell* (Berkeley: University of California Press, 1984), 32.

I have internalized my views in a bit of mild schizophrenia much like the brief back and forth I have presented here between Gsell and Rodin. Within the confines of what they intend to measure (light, translated into points and pixels), the camera, the CCD, the screen, are indeed “unimpeachable mechanical witnesses.” However, we haven’t defined our concept of truth. Rodin seems to take the human eye and mind as an unimpeachable *organic* witness - giving it the credit it deserves to imagine and project motion in time.⁴⁷ To Rodin, truth is in human observation and projection - thought. To Gsell, truth is a measurement and reproduction of that measurement. To me, there is truth in both.

My earliest work exploring these themes and this process offered much plainer and direct references to this context. A foundational work to the thesis exhibition, titled “Woman Walking Downstairs (After Muybridge)” is especially relevant.

As its title suggests, it borrows heavily from the work of Eadweard Muybridge. Muybridge is known as an innovator for his work capturing motion before the advent of the motion picture camera. His photographs are composites of multiple shots of a living subject in motion - from horses to nudes - arranged from left to right, top to bottom in sequence. After learning that Marcel Duchamp’s famous painting(s)⁴⁸, “Nude Descending a Staircase⁴⁹” was a direct reference to this particular work⁵⁰, I sought to create a derivative work, parallel to Duchamp’s using digital imaging technology.

It was crafted, like the work in “Treachery,” from a flatbed scan of moving video. I first disassembled Muybridge into its constituent frames and assembled it into two, looping videos - one for the top “strip” of motion and one for the bottom. An example of this effect on that particular work (particularly the top “strip”) can be easily found online.⁵¹ I then played this video back on the same LCD, placed upon the same flatbed

⁴⁷ It’s worth noting that, as motion pictures had not yet been invented, he is not taking that medium into consideration.

⁴⁸ There are three versions of this painting. Arguably the second is most the recognized.

⁴⁹ Duchamp, Marcel, "Nude Descending a Staircase (No. 2)," Philadelphia Museum of Art Permanent Collection, <http://www.philamuseum.org/collections/permanent/51449.html?mulR=619148187|4> (accessed April 15, 2014).

⁵⁰ Tate, "Eadweard Muybridge - Tate Britain: Exhibition," [tate.org.uk](http://www.tate.org.uk), <http://www.tate.org.uk/whats-on/tate-britain/exhibition/eadweard-muybridge> (accessed April 15, 2014).

⁵¹ Muybridge, Eadweard, "Woman Walking Downstairs," Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Eadweard_Muybridge_1.gif (accessed April 15, 2014).

scanner which I would eventually use to produce "Treachery."

I captured 33 images with the scanner in sequence; 12 for the top "strip" video and 11 for the bottom, exactly the number of "frames" in Muybridge's work. I then composited each image into one, mimicking the layout of the original. At a glance, the final work is obviously, visually akin to its source - yet (as I hypothesized) its constituent frames are abstracted such that they have more in common with Duchamp's "Nude Descending a Staircase."

I found these results immensely gratifying - and took them as evidence for my personal theories regarding imaging technology and its place in an art historical context. Muybridge's experiments with photography and motion famously included a challenge from horseman, Leland Stanford to determine whether or not all four of a horse's hooves ever left the ground simultaneously. As human vision could not determine this with accuracy, it was the subject of much debate in the equestrian world. Depending upon imaging technology as an "unimpeachable mechanical witness," Muybridge proved his theory (that they do) to the satisfaction of Stanford and the press.

In his work examining Muybridge, Duchamp sought to flatten the concept of motion into one image - to envision beyond the limitation of biological, human vision to a static, human and emotional representation of it. His work "compressed" Muybridge's motion, the mechanical witness in a way much more akin to Rodin's description of what a sculpture was capable of - capturing "the impression of a gesture that is executed in several instants." My experimental, doubly-derivative work sought to employ imaging technology's new capacity for "emulating" human vision circularly, self-referentially to demonstrate its faults. My "mechanical witnesses," the CCD, the LCD, the computer processor stood in for both the human eye and consciousness, Duchamp's interpretation of a hypothetical "static" capture of motion, as well as Muybridge's camera - to create a literal version. This version magnifies the question - and led to the further exploration of work in "Treachery."

There can be no apt comparison to the outfit of biological technology with that of digital technology. They are purely different systems meant only to meet one another

through translation. Perhaps, Duchamp sought to explore a similar notion within the parameters of technology in his time? Yet, like each generation, in time, our technology provided ways to explore and expand upon concepts previously unavailable.

Digital technology has enormous power to create images, impossible images, which could have never met human eyes prior to today. It has the power to manipulate images and even the way in which we perceive them - so much so that we may need to begin questioning our notions of reality. In fact, we already have.

Now that the computer age has arrived there is no way to know what methods will be employed in the future to manipulate our vision of the world, or in what physical manner photographs will be manipulated. The possibilities are endless. Computers make our notion of light, as a prerequisite for generation of imagery, obsolete. The boundaries between art forms and their physical requirements are blurring. However, as long as the work produced by these machines produces a personal, communicative vision, we should be able to evaluate it as art. If not, we shall find ourselves back at the time of the pictorialists, who attempted to convince the world that machine-generated imagery is a valid form of artistic communication. It is important to remember that communication is the overriding issue when reflecting on any art form. While photography was initially hailed as a scientific discovery, then as a recording device, it was through manipulation of this medium that photography came to be regarded with respect in the art world. Photojournalistic documents communicate through the absence of manipulation. A more personal type of communication demands a manipulated photograph—one which sees beyond the boundaries of the “real” and into the realm of the “surreal.”⁵²

Soon, there may not *be* a debate to have about the “honesty” of media in physical vs digital forms. There may not *be* a distinction between traditional and “new” forms. It is completely within reason that *all* forms may become digital. They merely need be processed and delivered in a familiar way. Those who lived through the birth of

⁵² Davenport, Alma, *The History of Photography: An Overview* (Boston: Focal Press, 1991), 176.

the world wide web, and its rise to ubiquity in merely 25 years may attest to its power in transforming media. This is certainly my view. When that conversion is complete, we open ourselves to the notion of glitch, the translational error, as a part of our reality - and not necessarily a mistake.

Though I did not encounter this quote until years after creating my work in "The Treachery of Imaging," James Bridle very neatly (eerily) sums up my purpose for creating this series. "Representations of people and of technology begin to break down, to come apart not at the seams, but at the pixels... the rough, pixelated, low-resolution edges of the screen are becoming in the world."⁵³

⁵³ Bridle, James, "The New Aesthetic," The Really Interesting Group Blog, <http://www.riglondon.com/blog/2011/05/06/the-new-aesthetic/> (accessed February 28, 2014).

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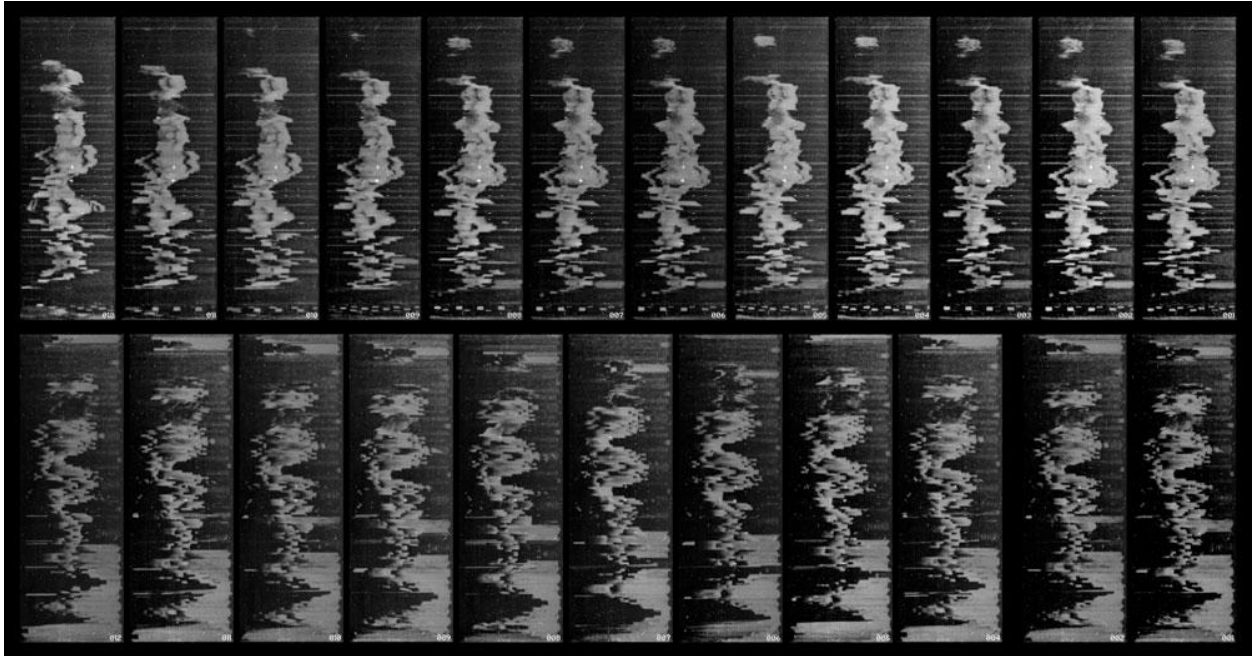
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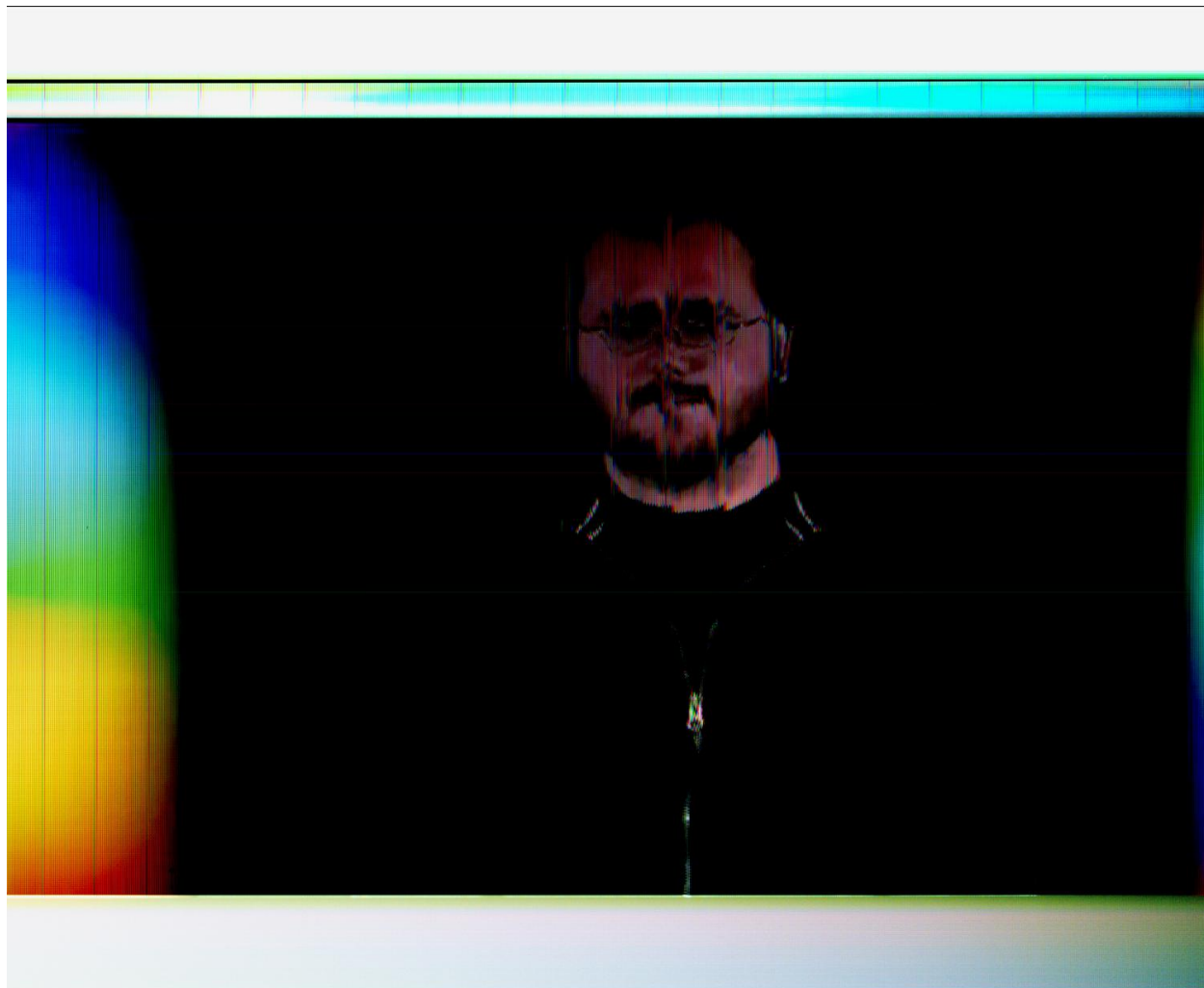
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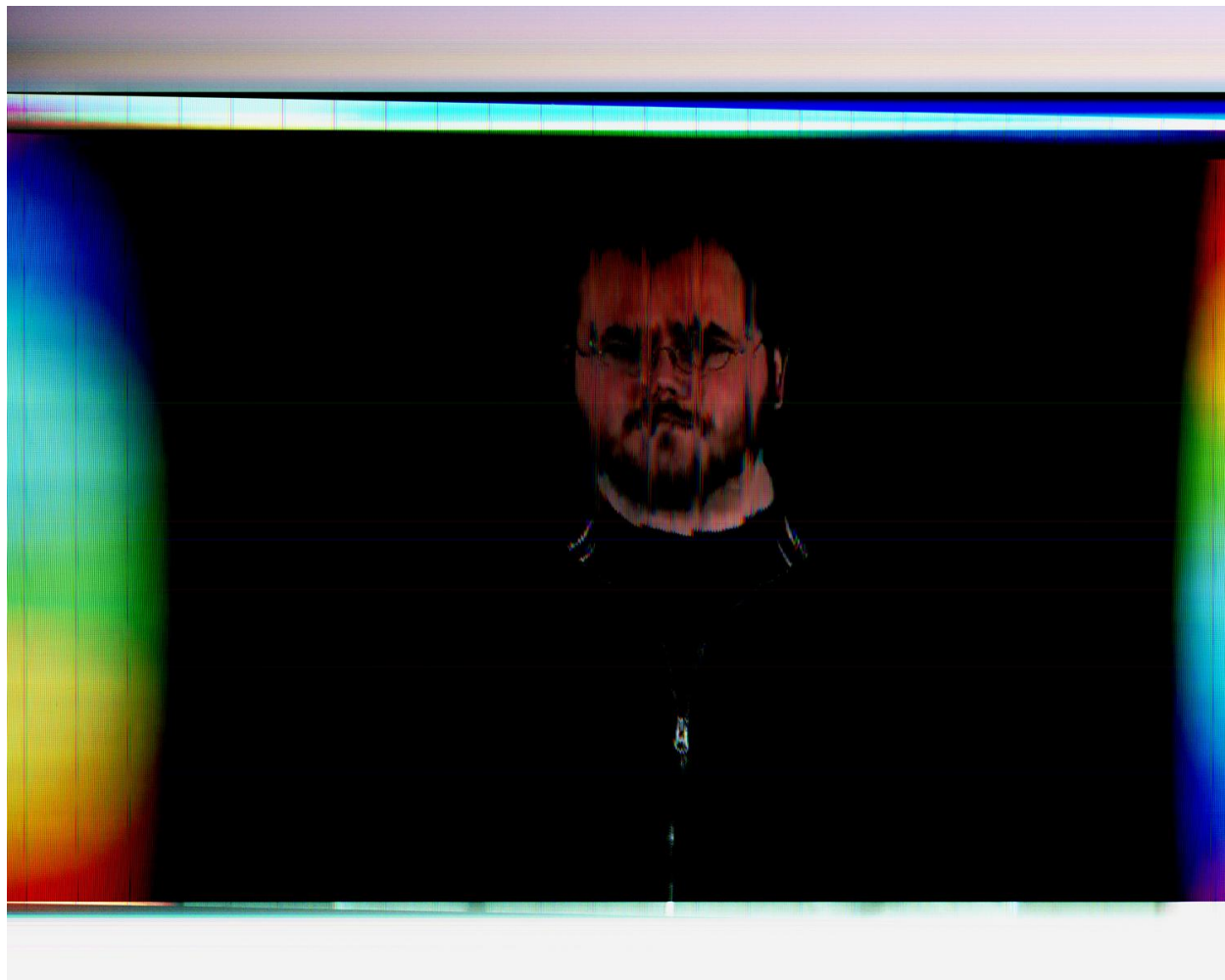
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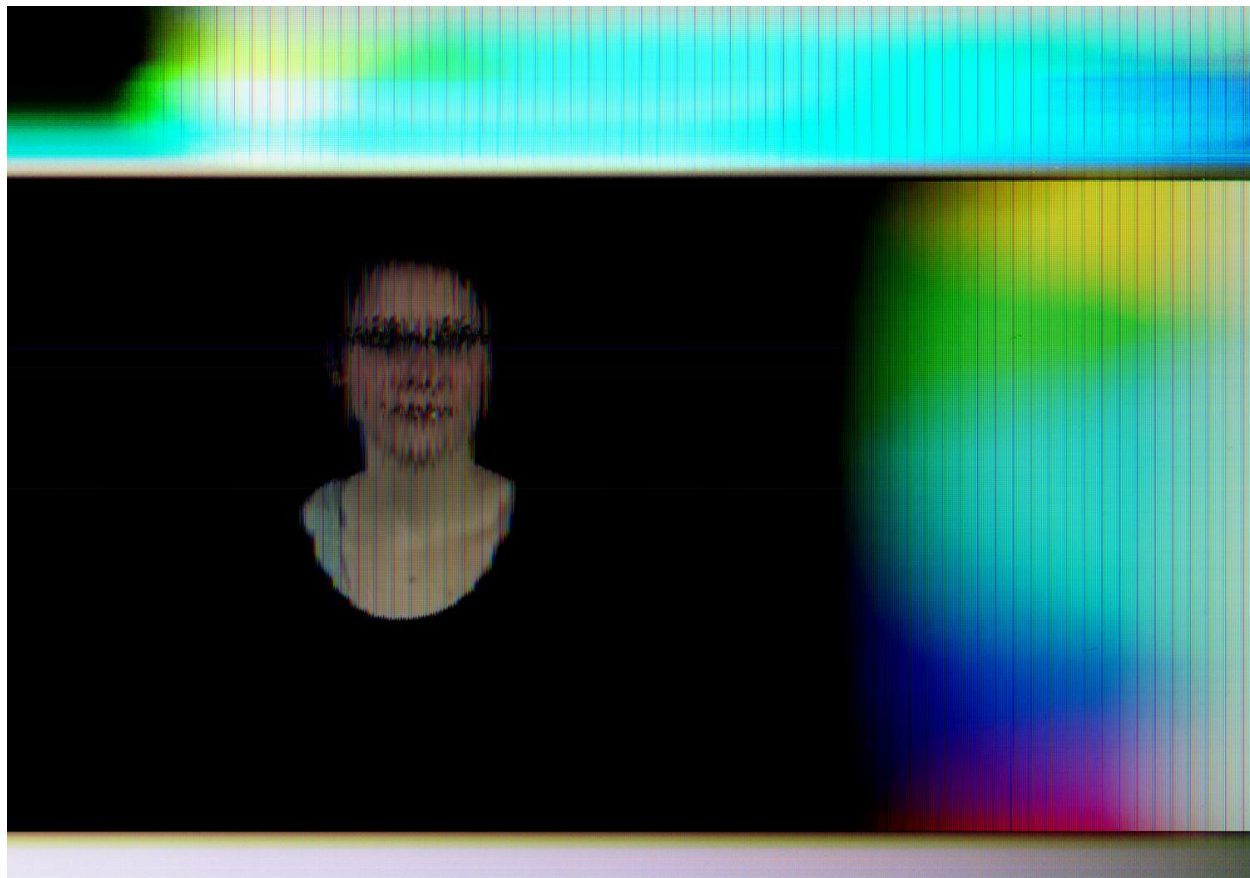
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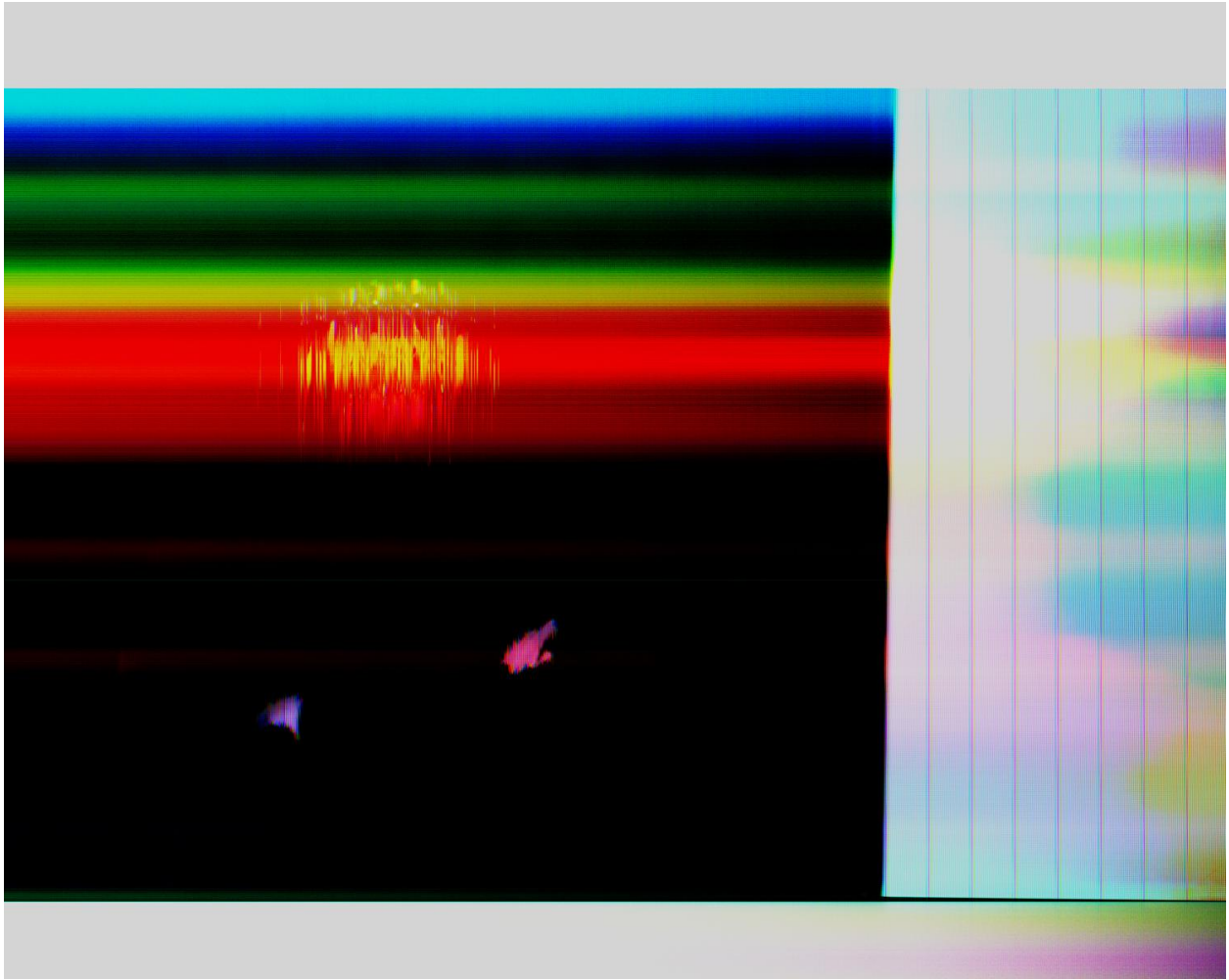
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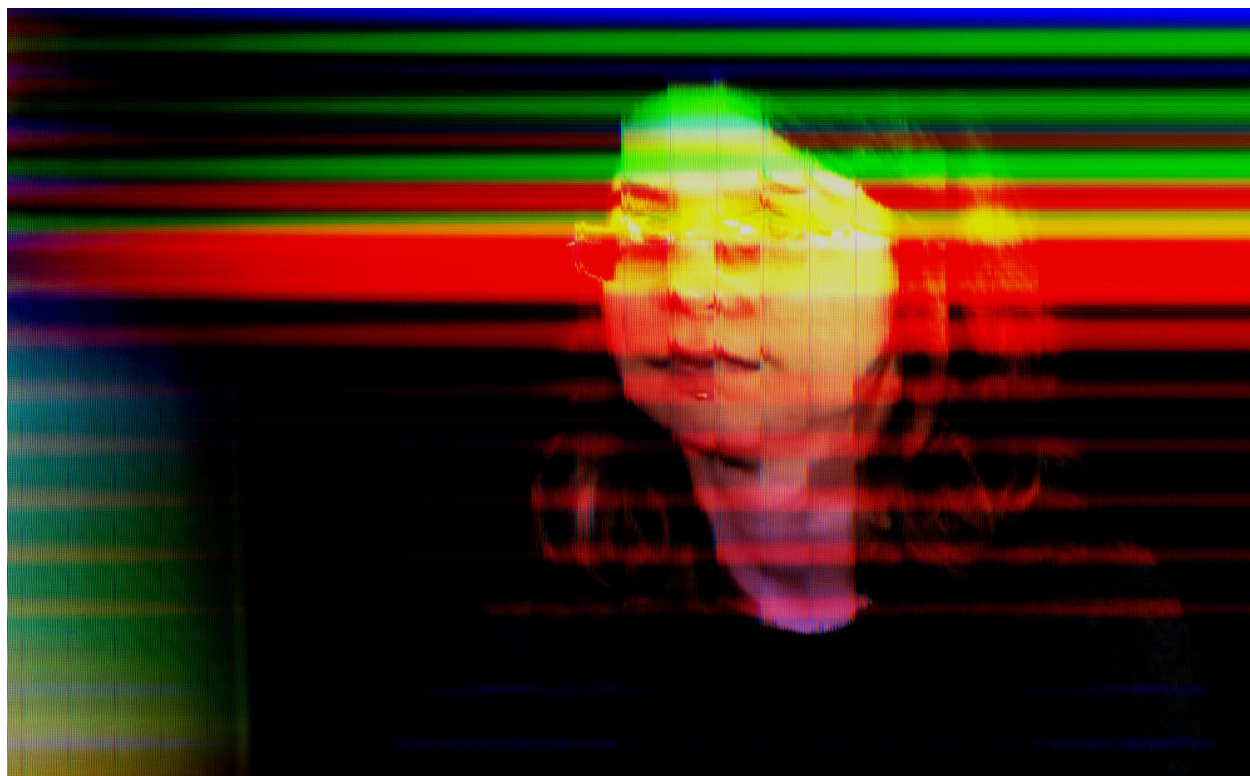
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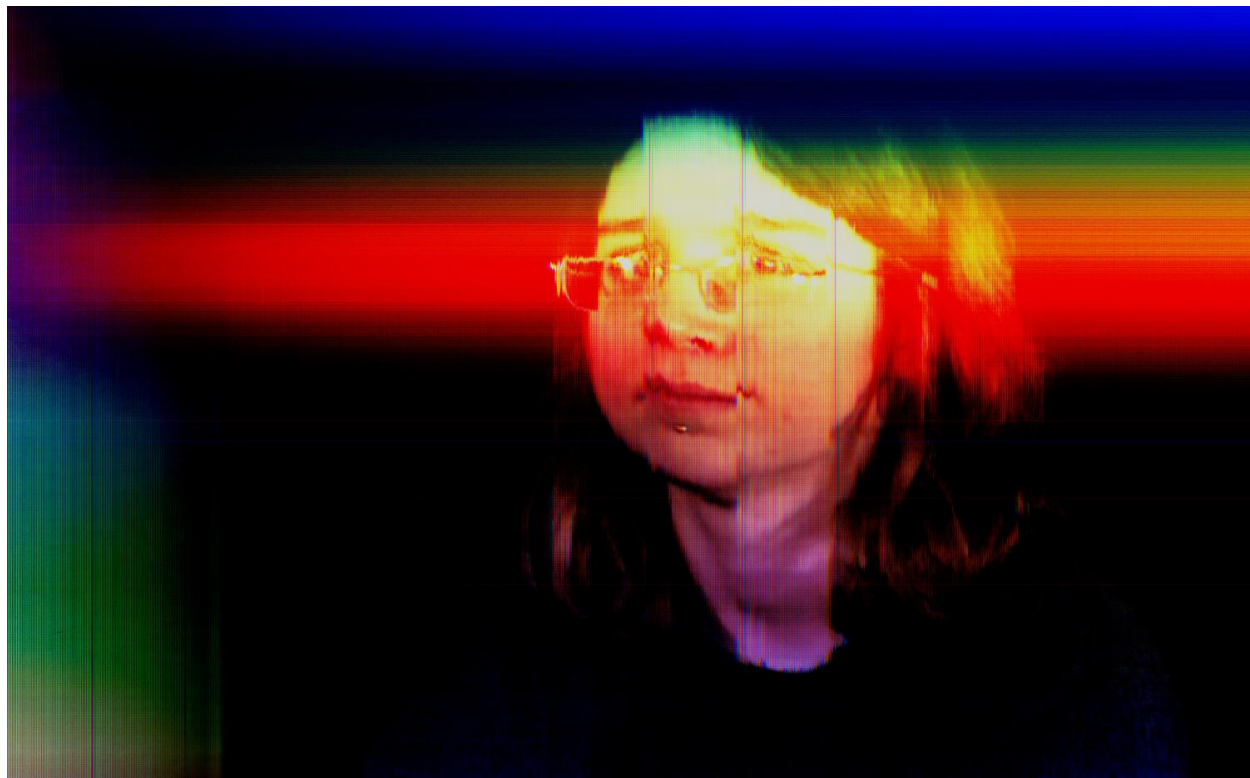
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