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Seeing the unseen: revealing invisible and visible minutiae

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SEEING THE UNSEEN:
REVEALING INVISIBLE AND VISIBLE MINUTIAE

by

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A thesis submitted in partial fulfillment
of the requirements for the
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It is essential that we do not fall into the error of supposing that scientific accuracy is art. It is destructive of art, and the temptation to put too much stress upon exactitude is a mistake the printer must guard himself from with the most sedulous care.

George French, *Printing in Relation to Graphic Art*
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In the essay, “The Lost Art of Making Books,” written in 1915, by influential papermaker and historian, Dard Hunter, the author bemoans the current state of book production. He charges that the involvement of so many different specialized craftsmen, with differing artistic temperaments, can only lead to the manufacture of discordant books. After a short rant, Hunter then describes their working practice as, “simply printing books, not making them”. To confront this distressing reality, Hunter put forth an alternative idea he termed “the book harmonious”. It was a concept that called for a singular practitioner to design and execute all aspects of a book, alone. This meant that one master craftsman had to organize the layout, make the paper, cut the punches, set the type and print each book, one page at a time. The importance that the maker participated in each step was paramount to make certain that not only every detail be a conscious decision, but also to impart their personal touch in the process. It was only then that the book would be united in its elements, and take on a personality all of its own.

To follow Hunter’s demanding standards would be a difficult task to live up to, but his sentiment is one I admire. Having worked as a printer and binder, the notion of craft and the idea of a job done well, are extremely important to me. I believe that the more one knows about the medium they choose to work in, the more free they are in their

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2 I choose to define pattern as a grouping of similar shaped objects, not as a geometrically uniformed repeatable arrangement.

3 These attempts include drawing the entire pattern freehand, gluing premade shapes one
ability to create. There is a fair argument to say that the book *harmonious*, is overly

![Image](image_url)

**Figure 1:** *Just Below the Surface*, lithograph and screen print, 21.75” x 12.75”, 2011

idealistic, that it is too difficult or impractical to learn all the skills that pertain to a certain medium. For me, whether or not the act of fabrication was done all by the same hand is not of concern, but the fact that the artist or designer knew how each detail would affect one another and took the time to make each detail right is superlative. That devotion and attention to an object will make it stand out, for it will be unique. More importantly, what Hunter does not mention in his essay, but is implicit to his entire concept, is that a craftsman must be curious to learn, determined to overcome failure, and be willing to share what they have learned. Anyone who attempts to master every stage of a discipline will fail many times, but their desire to learn from their mistakes and their passion for the material will keep them dedicated to their goal. Their willingness to share what they have learned will not only save many from encountering the same discouraging pitfalls, but
also allow them to learn from others. Without sharing and curiosity, a craft will eventually go stagnant. Practice, enthusiasm, study and sharing will help artists overcome the limits they encounter with their work and help elevate the technical and aesthetic possibilities of their mediums.

Figure 2. Rift, relief and screen print, 21.75” x 12.75”, 2011
Sight is the most important of our five senses. It allows us to navigate our environment, find food and avoid danger. Sight can be used to accurately render a drawing or to recognize nuance in a form. It can also be used in more dynamic ways to parse the complicated social systems and customs that build our societies.

Despite all that we can see, we are inundated with what we cannot. This inability to see can be categorized into two subdivisions: items that possess characteristics that are beyond our eye’s physical capacity of perception (e.g. microscopic objects or electromagnetic radiation) and items and situations whose exact presence goes unnoticed due to our mind’s conditioning from repeated exposure (e.g. glass in a window frame or halftone dots that form a printed picture).

Through the use of special instruments or awareness raising techniques these invisible objects can be brought to light. Artists and their art have often played important roles in society by revealing things that go unnoticed and making them plain to see for all. These revelations can be as simple as capturing the beauty of a natural landscape or as controversial as portraying the impact of religion, gender or oppression in our communities.

My most recent set of prints investigate “seeing the unseen” by meditating on the minutiae and microscopic organisms that permeate our surroundings yet escape our attention. By utilizing handmade paper’s tactile qualities, juxtaposing seemingly dissimilar objects and the use of bold and often times unnatural color, I have attempted to
create a space where items of different scales can exist side by side so we can revel in their wonder, discover visual similarities between objects and plainly see them with our own eyes.

Figure 3. CaCO₃, screen print, 21.75” x 12.75”, 2011

The source material for this set of prints comes from two origins, science literature and printing history. I have always found science to be a fascinating subject. Photographs of natural phenomena, the cosmos, and the microscopic have always been of interest to me. The printing trades and their history are an equally rich subject. Registration marks, star targets, and methods of conveying tone all make their way into my prints. I enjoy how both sources, however disparate, are so unfamiliar when viewed up close that they read less like physical objects and more like abstract compositions. The items I have chosen to feature in my prints are largely symbolic of the greater theme of seeing. Atoms,
bacteria, and fibers are all things that cannot be seen with our unaided eyes. Printers’
marks are used to reveal minute changes in the performance of printing presses. And
halftones, line engravings and bitmaps are all graphic methods for creating the illusion of
continuous tone. While the halftone marks are small, they usually are still clearly visible
to the naked eye, yet we have been trained to look past these marks to mentally build the
image they are meant to construct. The way in which the halftones dots interact and
overlap one another are strikingly similar to the atomic structure of various minerals or
the chaotic proliferation of microorganisms. When looking into the center of these
arrangements it is difficult not to imagine a hidden universe where elements appear and
disappear within the amalgamation. From a formal standpoint, I enjoy the element of
mystery and intrigue that goes on within these systematic patterns.
CHAPTER III
PERSONAL METHODOLOGY

I have identified five distinct stages through which my most recent prints took shape. The following descriptions briefly outline each stage of the creative process.

**Brainstorming**

Every print begins with a response to something I have seen. Whether this is an encounter with a photograph, a texture, or a material, some sort of memory of this encounter has been filed away in my head. When it comes time to make a print, I try and recall these images that have captured my attention. I begin to think about how I can pair this imagery with other objects that I have found captivating, in order to make intriguing visual combinations or intellectual links between disparate objects. Once I have a few ideas, I begin to sketch small drawings or collect samples I can scan into a computer. I will examine these sources and begin to make loose compositions, pairing different combinations of these samples in my head.

**Material Manipulation**

The processes of physical manipulation and collage are very important to me. To be able to use my hands to alter materials and to feel their reaction to my movement is an essential part of my art making. I consider the images I make to be handmade, despite how much I rely on the computer for composing the layout.

Once I have collected some source material, I make copies of them with a scanner and printout enlarged selections of these samples on tabloid sized paper. When re-appropriating old printed imagery, I try and select portions devoid of recognizable subject
Figure 4. *Magnification*, screen print on hand made paper, 21.75” x 12.75”, 2012

matter. I intentionally avoid these areas because I want the viewer to instead focus on the visual appearance of the marks, line work or texture. I also want the viewer to be able to establish a vague correlation with the era those marks imply, but not be burdened with the baggage a recognizable item denotes. I am more interested in capturing essence, not specifics. When blown-up in scale, these extracts become unique abstract compositions. After duplicating these sources, I physically alter the copies. Folding, crumpling, tearing: these actions crack the toner on the printout adding new textures and information to the enlargements. The altered pieces are then scanned back into the computer so that I can then further work with them digitally.
Trying to create the random multilayered patterns that appear in my work is a time consuming process, especially when I am trying to cover an entire sheet of paper. Over the past several years, I have tried a number of methods to create these patterns, all of which were slow, resulting in slightly stiff or unnatural compositions. With this series, I have utilized a new method to quickly generate these large fields of repeated imagery. The best part is that this method creates reusable elements so an infinite number of compositions can be made from the original source material.

The key to this new process relies on the fact that a dense pattern contains so much detail, that a viewer is unable to notice the individuality of the shapes at first glance. Therefore, it is not important that all of the shapes comprising the pattern are unique. I have taken advantage of this fact by making many duplicates of a small amount of originals. To begin, I first make a hand drawn image with a marker. Usually I draw one or two dozen objects in different poses. I then scan these images into a computer and create a vector file of the image. Next, the file is loaded into a CNC laser cutter where the machine traces the vector outlines and cuts the shapes from of a sheet of paper. I can easily create as many duplicates as needed.

To compose an image, I then scatter the shapes onto a sheet of paper. The image can be manipulated by choosing how many pieces are thrown and in what manner. If the pieces land in an unsatisfying arrangement, I simply pick them up and start over. Once the image is composed, I take a digital photograph, perhaps further altering the scale and

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2 I choose to define pattern as a grouping of similar shaped objects, not as a geometrically uniformed repeatable arrangement.

3 These attempts include drawing the entire pattern freehand, gluing premade shapes one piece at a time to a piece of paper and digitally arranging shapes one piece at a time using computer software.
appearance of the shapes by what angle the photograph is taken. Then I digitally manipulate the photograph to generate a printable film from the computer. When using this technique, a composition that would have taken me hours to compose by hand now takes minutes, and appears much less contrived than when using my previous methods⁴. Once finished, the pieces can be swept up and used over and over.

Figure 5. An example of laser cut bacterial shapes. The black pieces measure approximately 0.75”

**Digital Composition**

I use photo stencils and screen printing for the bulk of my image making, therefore, I am able to use computer software to arrange my source material into a composition. I find the computer to be a very versatile tool that allows me to work through ideas and

⁴ Granted, there is much work in creating the laser cut shapes. The investment in time is worth it in the end because I can reuse these pieces many times.
visualize them in multiple ways.\textsuperscript{5} The ability to backup several steps and change creative direction is also a great help when realizing that a current idea is leading nowhere. It is in this stage that the layout of my composition finally becomes concrete. The ideas and imagery I see in my mind during the brainstorming process are always fragments. It takes physically moving each piece around and looking at it to finally comprehend the complete work. I often find myself reacting to certain combinations of elements during the image making process that I had not considered when I began. These discoveries can lead the work in a new unplanned direction, which I find quite exciting and rewarding.

\textsuperscript{5} There are always situations where doing something by hand would be much easier than getting the software to do the same thing. However, working with both computer and handmade elements often brings up more technical problems than I care to deal with. So after an initial struggle, I often am able to overcome digital dilemmas by rethinking how I chose to construct the image using the software.
Papermaking

For the past year, I have been experimenting with hand papermaking techniques, and how I can use paper to enrich my printed images. Handmade paper has a personality and tactile element that commercially made paper does not. By making my own paper, I can create unusual surfaces or add imagery into the paper that further enhances the layers of overprinted imagery.

There are two approaches I have taken in my papermaking. One method is to create a batch of paper because I am interested in the texture or the quality of the fiber. These sheets are usually not made for use with a specific image but rather made for use in the future when the right image comes along.

The second approach is when I make paper to be used in conjunction with a specific image. In this case, I might start with an idea of what I want the image to look like, and then I think about how the paper can add to that image in ways the print alone cannot. Screen printing has a very hard-edged and flat aesthetic, so by incorporating the subtlety and softness of the paper into the image, the possibilities of what can be achieved are greatly expanded. The handmade paper adds a great amount of visual depth that is not possible with a perfectly smooth white sheet of machine made paper. No matter how transparent the ink is it always appears to sit on top of a machine-made paper. With a handmade paper and transparent ink, there is greater interplay between the two materials.

Printing

At this stage the form of the image is set and the screens containing the visual information have been prepared. All that needs to be done is to give them color. I
consider color to be one of the most important aspects of my work. If a print does not use
color well I find it difficult to look at. Color is what pulls a viewer in from across the
room. While the details of a print might be difficult to see from far away, color always
calls out.

I see many of the objects in my prints as having an internal excitement, tension or
vibration. To help convey these attributes to the viewer I use bright and often jarring
color combinations. As I work on a series of prints, I try to touch upon all points of the
color wheel. Using a wide variety of color helps keep things fresh as the viewer moves
from one print to the next and prevents the work from falling into predictable
formulations.
As I compose an image I consider what colors will work best by visualizing different color combinations with the computer. An object’s color is easily adjusted and can be saved so that it is possible to view several potential color schemes on the screen all at once. However, as good as the computer is, the colors on the screen are never like they are on the print. I think of it metaphorically like a weather forecast: I know it is going to rain but not quite how much. The biggest problem with the computer is that it doesn’t accurately depict what colors are going to be formed when two or more ink layers overlap. But with experience it is possible to guessimate how the ink will appear on the paper.

I seldom mix all of the inks ahead of time because I know that I will have to change many of them as I proceed through the printing of the image. After finishing a run, I evaluate how it turned out and judge if it is working visually. When a color turns out far
different than how I expected, I will revise my original color scheme to compensate for
these changes. I am fine with having the color shift a little from what I had originally
intended. To me, color is more of a mathematical problem. For every situation there are
only a couple of choices that will work for the given colors on hand. If one color gets too
dark or too blue, etc., it can be balanced out with the next run. If the appearance of the
print doesn’t work by the end of the last color I can always start over again after all, this
is printmaking: there are always more copies to be made!

Figure 9. *Untitled VIII*, work in progress, digital screen shot, 21.75” x 12.75”, 2012
CHAPTER IV
AN ARTIST STATEMENT

Residing in a space between historical print traditions, the book trades and contemporary graphic design, I embrace craftsmanship and artistic formalism while pursuing the development of a unique visual style and new methods of working. Perception has been a long standing theme running throughout my body of work: how we perceive images paired with text, how we interpret masses of information, and how we observe our surroundings are all subjects of investigation. In practice, these inquisitions are given form through the medium of print and use overlapping layers of text, found imagery, gestural drawing and bold color combinations. The goal is to create a conversation between a historical, craft-based medium and contemporary fine art informed by science and technology.