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Consuming Digital Debris in the Plasticene

Stephen R. Parks

Perhapstechnobuyproduct: Consuming Digital Debris in the Plasticene

2016–2018

A USER GUIDE OR USER('S) GUIDE, ALSO COMMONLY KNOWN A MANUAL, IS A TECHNICAL COMMUNICATION DOCUMENT INTENDED TO GIVE ASSISTANCE TO PEOPLE USING A PARTICULAR SYSTEM. IT IS USUALLY WRITTEN BY A TECHNICAL WRITER ALTHOUGH USER GUIDES ARE WRITTEN BY PROGRAMMERS, PRODUCT OR PROJECT MANAGERS, OR OTHER TECHNICAL STAFF, PARTICULARLY IN SMALLER COMPANIES.

A GUIDE, A CONTINUUM, A PROMISE

Submitted to the faculty of the School of the Arts at Virginia Commonwealth University in partial fulfillment of the requirements for the degree, Master of Fine Arts in Design/Visual Communication.

Stephen Parks

Edinboro University of Pennsylvania
Bachelor of Fines Arts
Applied Meida: Graphic Design
Edinboro, PA
2013

Virginia Commonwealth University
Master of Fine Arts
Design/Visual Communication
Richmond, VA
2018

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About This Manual

Its Purpose

      This book is a personal definition of a user manual. It pulls its inspiration from step-by-step instructions, visual references, and organization typically found in mechanic manuals or other similar publications.
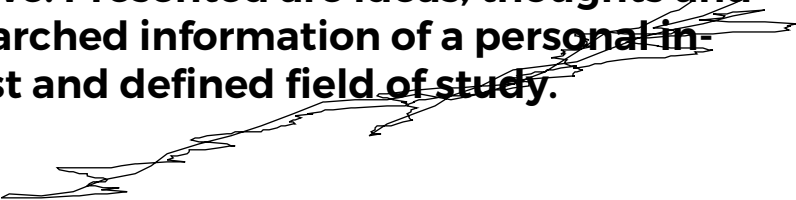
      The ideas in this book move back and forth from general to specific and from conceptual to concrete. This book is to be used as a critical medium to explore the development of ideas throughout the past six months of graduate school.

      User(s) Manual is intentionally eclectic and idiosyncratic in its pursuit of a concrete definition that encompass the ideas and land-scapes I have developed through this journey.

Using the Manual

The manual is divided into Chapters. each Chapter is divided into numbered Sections, which are denoted typically at the top left of the page. Each Section consist of consecutively numbered parcels of writing. Accompanying the writing is reference photography which help contextualize the writing. Even though this manual has been prepared with extreme care, neither the publisher nor author accept responsibility for any errors in, or omissions. The information presented is not total nor should it be considered definitive. Presented are ideas, thoughts and researched information of a personal interest and defined field of study.

Notes

: information such as **notes** necessary to clarify a reference or side comment made by the writer

Warnings

: A **warning** denotes a comparison or other reference made that should be taken as fulfilling an idea

Cautions

: **Cautions** should be taken as a stream of conscious and as literary relief

Using the Manual

Abstract

Claims of customization and control by socio-technical industries are altering the role of consumer and producer. These narratives are often misleading attempts to engage consumers with new forms of technology. By addressing capitalist intent, material, and the reproduction limits of 3-D printed objects', I observe the aspirational promise of becoming a producer of my own belongings through new networks of production. I am interested in gaining a better understanding of the data consumed that perpetuates hyper-consumptive tendencies for new technological apparatuses. My role as a designer focuses on the resolution of not only the surface of the object through 3-D printing, but the social implications to acknowledge consequential conditions of new forms of consumer technology.

Abstract

Abstract
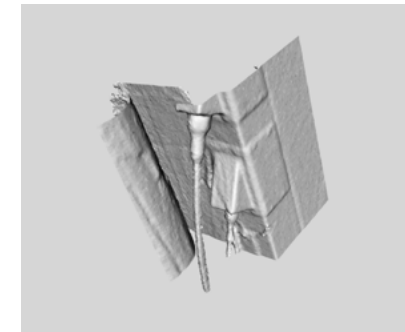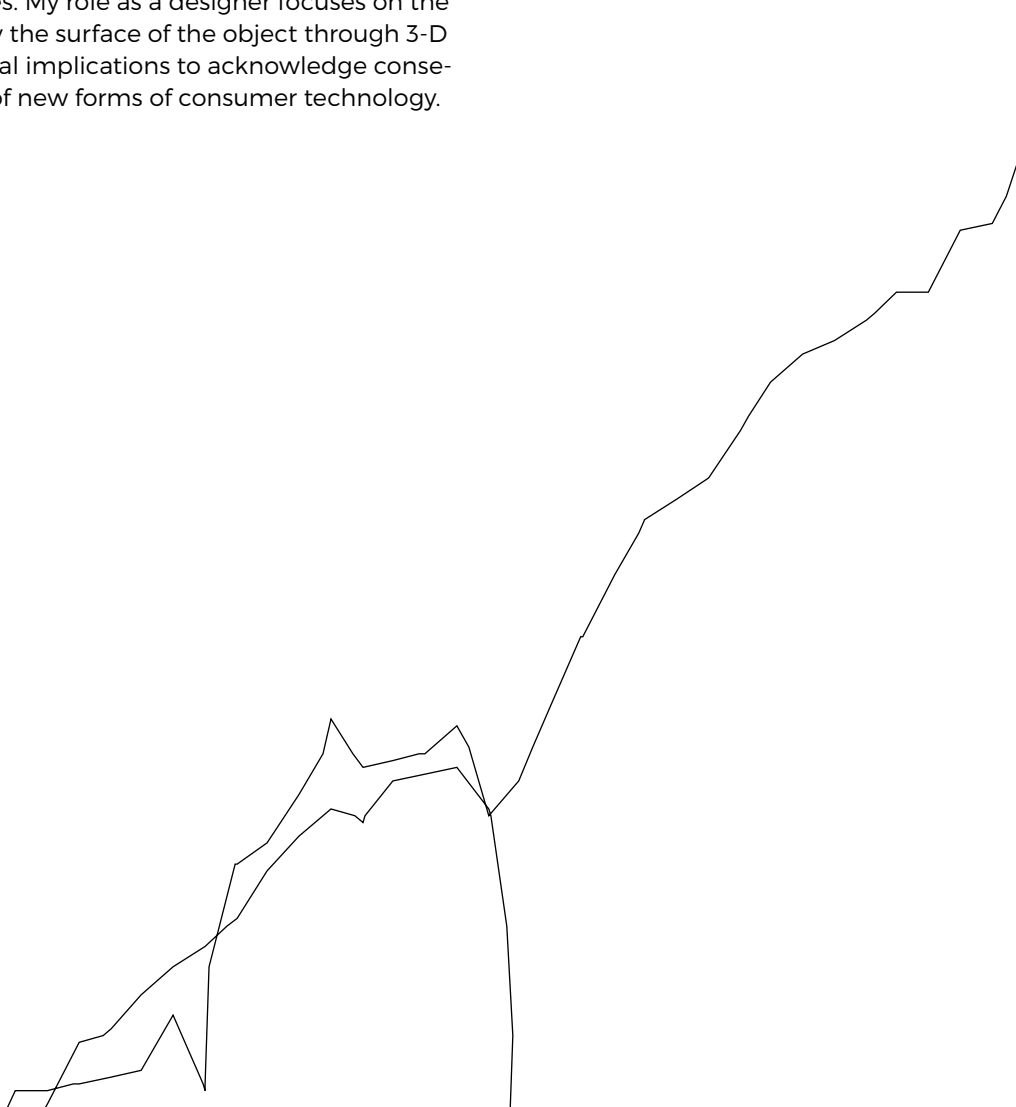
Introduction

Growing up just north of Pittsburgh, Pennsylvania it was understood that things created out of the post-industrial era would not live forever in this climate. Environmental impacts, material decay, and global economies all have equal parts in placing a life expectancy on material goods, not to mention what some call the inevitable progress of technology.

My fascination with manufacturing and production methods grew from my interest in the automotive industry. It is here where I first discovered assembly lines, the practice of modifying and adapting parts, along with the vast global circulation of parts and products. It is within this network where I understood economic and material value could be one and the same. The attitude, "if it ain't broke, don't fix it," was highly regarded as a way of life. Material wear, which some call patina, is inevitable in the rustbelt.

As a teenager and early college student, I became interested in architecture and the decaying landscape that surrounded my undergraduate college in northwest Pennsylvania—an area hit hard during the collapse of the steel and iron industry. Now following manufacturing, this region is witnessing a boom of tech-based, innovation-driven startups and corporations rise from the ruins of the old industry. Caught at the end of this resurgence, I found myself simultaneously representing a generation of designers and artist from the mid 2000s where information can be entirely digital, seemingly last forever, portable, and

always at hand. Afforded with this access, questions were raised: What is the current manufacturing landscape and how have rhetorical statement of democratized technology lead to a culture of hyper-consumptive tendencies? Do we need to consider our relationship to plastic remnants and their potential destructive ubiquity?

It seems that we are continually trying to keep up with technology. Where do these motives originate and what are they selling? Having experienced a corporate design setting, where marketing and advertising are deployed in highly promotional ways, I became fascinated with the politics of consumption and production related to the digital lifestyles we live. Coupled with that physical objects, materiality, and addressing functional needs, I found design as a primary outlet to voice concern, evaluate, and research my interests when it comes to new forms of industry and my growing fascination with the 3-D printing market.

Introduction
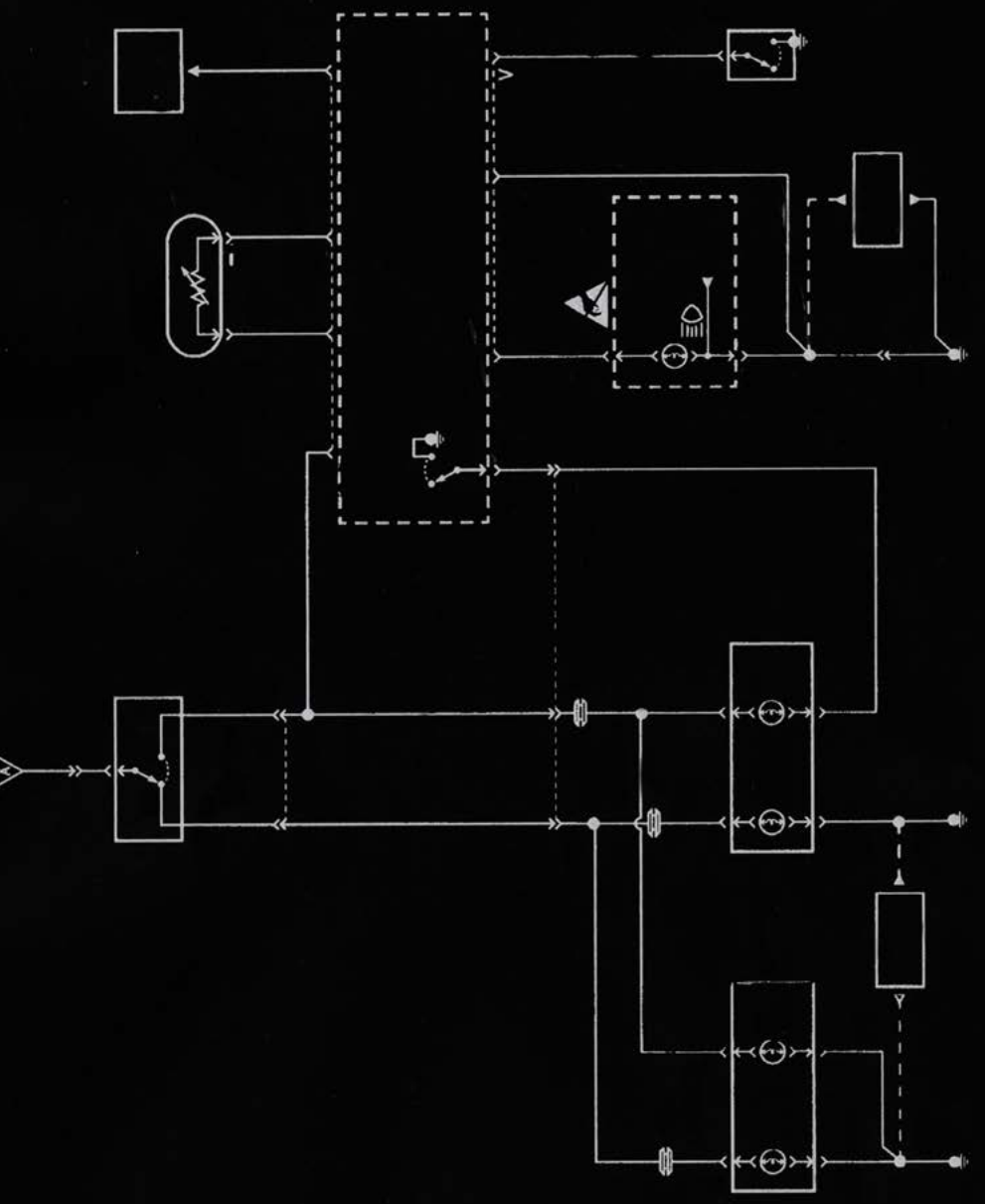
Definitions

digital debris

: traces of images, code, or any other digital
information that sits latent in hard drive space

data fossils

: a physical object created from a virtual
world through contemporary technology

materializing

: a combination of hardware and soft-
ware that accumulate and reorganize over time

dematerializing

: become free of physical substance;
cease to have material character or qualities.

resolution

: a sharpening of an idea without the
intention for a final solution

optimize

: to conditionally make the best or most effective
use of (a situation, opportunity, or resource)

Definitions
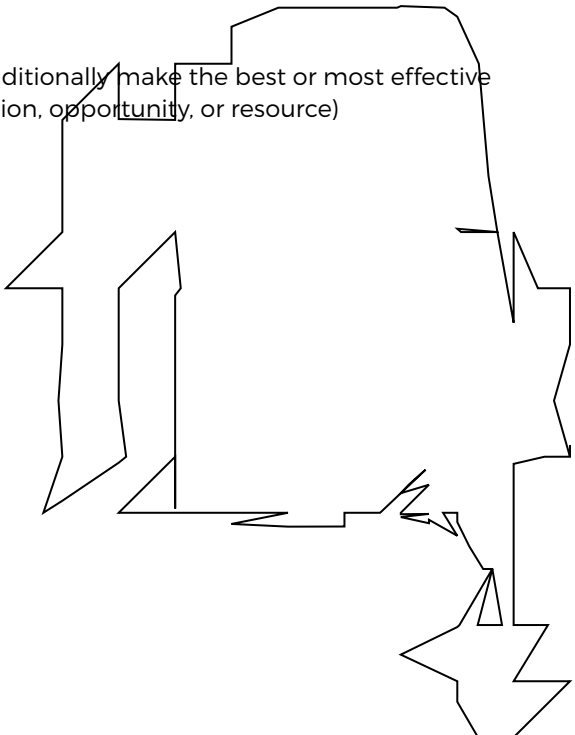
General specifications
(a guide in)

Between Industrial and Personal

What follows may conjure an experience of information retrieval—more inline with that of a computer hard drive. Like a calculated ensemble of search queries that arch, link, and order ideas, the development of information in this document ruptures a traditional approach of a linear argument with the intent to juxtapose fragmented ideas and concerns.

Fracturing data is an efficient method of storage. The retrieval attributes of a hard drive contrast our typical notions of how information should be ordered. In reality, we never come across information in a linear way. To make sense of it, we refashion it, but what happens when we allow those remnants of information to stay closer to their natural state? Does knowledge become resilient in its fractured structure? Do new cognitive relationships form out of resisting formation? By making this explicit does it transform information into a state of constant flux like that of new technology concerned with this document? This document can be considered notes, which can be an unfamiliar form for the reader. What ties these notes together is a mood, a dialogue between multiple voices that converge in the visual work presented.

I've compiled this book into a manual for further inquiry. User manuals, spec sheets, and field guides are not meant to be read from front to back, instead they compile necessary information into small groups that allow access to specific concerns. This manual plays with that idea and uses it as a form of new knowledge making and constructs an accessible platform for disparate ideas.

Specifications

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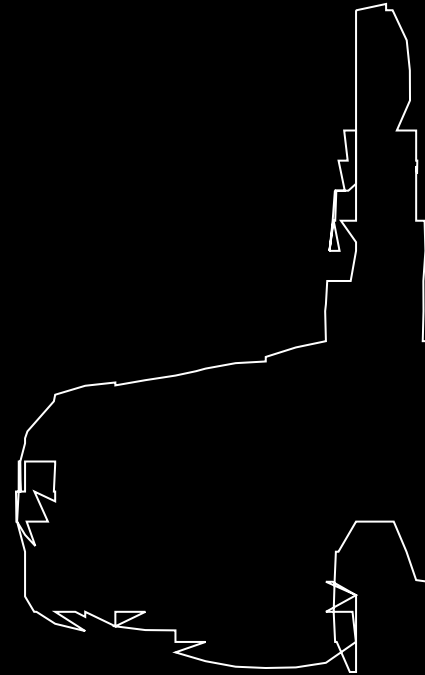
Section 01–
Into the Background

Like an archaeologist visiting a dig site, we made no value judgements amass all the findings. Instead each one was displayed in a searchable space-all 2,000 plus assembled. All unaltered from their current state, just transported and surrounded by the others. Did we move them too far· Due to the lack of discernible features on some, the population fluctuated. Those that remained developed communities and social ties. They formed bonds and related individual past histories. Scattered sand and precious metals lay beneath the 480v machine fuse adjacent to the 1996 Atlanta Dream basketball schedule where data suggest that the site was a breeding place of business that would be known as "regional" and "locally owned" though the rivalry between locality and franchise corporation, whose numbers, or lack thereof, significantly suggest the former species may have been the first to go extinct.

A Brief Understanding of the Machine 01-001

Computer Integrated Manufacturing is rapidly overshadowing all other forms of production, increasingly demanding we pay attention to a future where machines make, process, and run our day-to-day operations. As a society we have largely succumbed to the digital machine (computer, smartphone, Amazon Prime, etc.) that dominates our personal lives. In our age of rapidly increasing digital automation we see the boundaries blurring and roles changing for how information and products are created through continuously adapting technology and methods of production. We have reached a site of dispersion and dislocation with the tools and technology we interact with.

Dispersion and Dislocation 01-002

Dispersion: to cause to break up—to spread widely over distance
Dislocation: disruption of an established order

To define dispersion, we should compare it to its predecessor, dislocation. The traditional craftsman's role can be viewed as a state of being dispersed: spread out across multiple disciplines, making it harder to aggregate, access, or control into a collective enterprise. The origins of this dispersion predate the invention of the steam engine and simultaneously the factory for which it was made. The 19th century factory was organized around the concept of a central engine whose motion circulated to all of the workshops via shaft and pulley systems. At the beginning of the day, this powerhouse would be switched on, and the workers would have to adapt to the rhythm of the billowing engine, becoming a functioning part in the whole series of production.

In the beginning of the 20th century, workers were faced with the need to keep up with a machine that could outwork and outperform them if run continuously. This type of labor completely re-defined the role of the workers. Prior to this, craftspeople were identified by the products they produced, rather than the machine they operated. Cue dislocation, the change and pace of the factory tied the laborer, once craftsperson, directly to the omnipresence of the machine emphasizing a new relationship—weavers to the loom, ironworker to the steam hammer. This was the first instance where worker and machine developed a firm interconnectedness with the mechanism of production, being forced to adapt to its reasoning and logic.

The relationship between the worker and machine evolved into the 20th century giving way to mechanical automation and a partial removal of the worker from the real-time needs the assembly line required. As mechanical automation increasingly replaced the worker, a gradual shift occurred within the site of production. Although workers were freed from their labor intensive duties, the social dimension of the workplace was negatively affected. The loss of agency and rise of alienation set in when the worker became a monitor of production processes rather than an active participant. Coupled with this is Taylorism—the scientific basis to management where laborers on the job were clocked and strategies deployed for faster production. As Elvia Wilk a writer for *Rhizome.org* put it,

Taylor's name became synonymous with the early-1900s era of mechanization that idolized efficiency not only in the workplace but in all spheres of life[1]
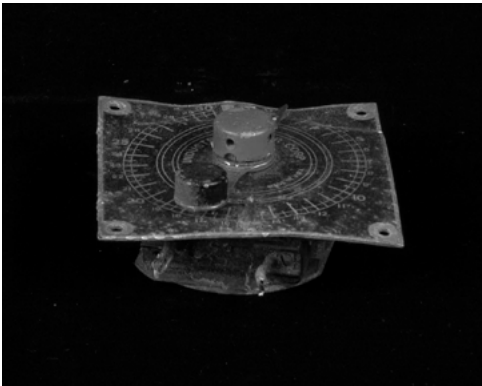
1. Wilk, Elvia. "The Artist-in Consultance: Welcome to the New Management." *E-Flux*, 2016. http://www.e-flux.com/journal/74/59807/the-artist-in-consultance-welcome-to-the-new-management/.

Discussion

Mechanology 01-003

Mechanology was the term coined by French philosopher Gilbert Simondon who studied the transformations of the Industrial Revolution. In his text, *On the Mode of Existence of Technical Objects*, Simondon investigated the existence of technical objects, which for him consisted of many things, one being new machines for manufacturing goods. Mechanology grew to study the existence of machine and human relationships with an aim to resolve the problem of industrial alienation. At this time Simondon was fascinated by the environment which humans and machines interacted and the difference between the domestic space—void of machines—and industrial space—machine reliant.
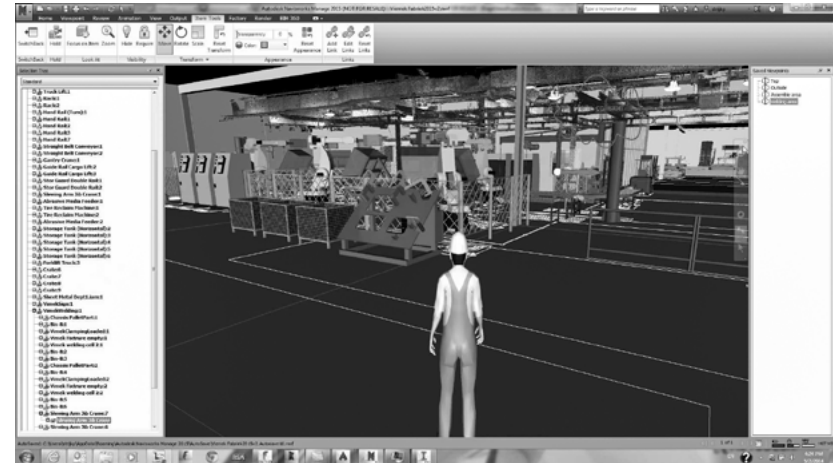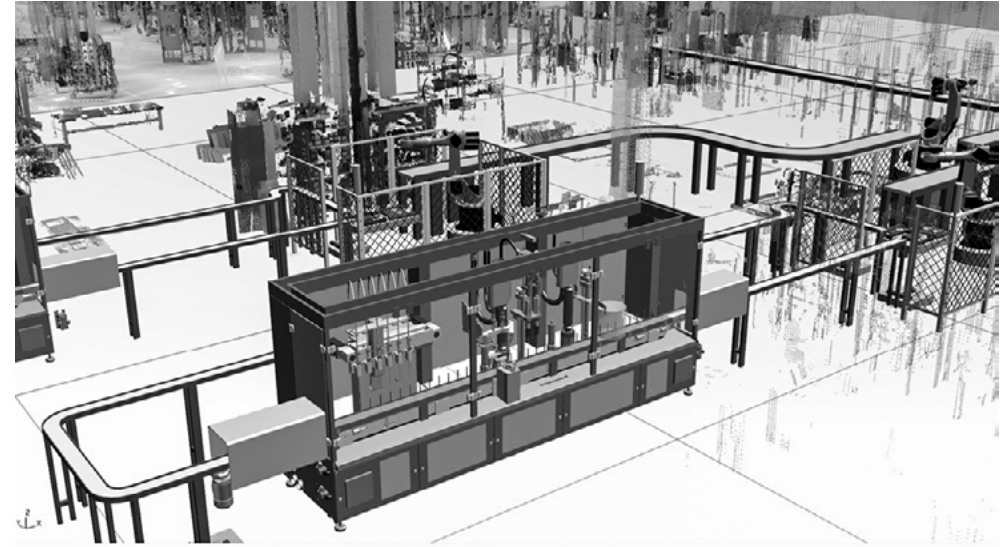
Images of Siemens USA™ proprietary digital production line efficiency software.

Once subtractive, now additive 01-004

3-D printing evolved through the technology of numerical milling, plotting coordinates that then became a digital programmable language in the 1980s. An additional tech advancement was the development of light-curable polymer resins. This system, incorporating early digital computer controls, powered electric motors on a three-axis platform, becoming what is now consider 3-D printing, meanwhile all developing alongside larger traditional forms of manufacturing (injection molding, casting, vacuum forming in the 50s and 60s). This started the revolution of adding material rather than subtracting. Unlike traditional goods made out of traditional materials (wood, metal, stone) that were built thicker and heavier due to material constraints. Plastic was able to render an object with thin shell-like walls. Shell being a term directly used in 3-D printing for the outer facade that coats the objects inner structure.

By being built all at once in a layered fashion, uncastable forms, intricate shapes, and "assembled products" became the selling point of this new technology by the mid 2000s.

With this new technology comes hints at the Fourth Industrial Revolution. It is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres. This revolution not only hinges on digital technologies
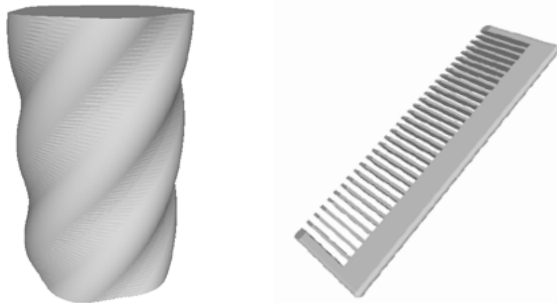
but the material transformations of plastic and its capabilities to mould this revolution into existence. Stepping back, we see visionary scientist like Victor Yarsley and Edward Couzen writing on the eve of World War II,

"Let us try to imagine a dweller in the 'Plastic Age,'" Victor Yarsley and Edward Couzens wrote. "This 'Plastic Man' will come into a world of colour and bright shining surfaces...a world in which man, like a magician, makes what he wants for almost every need"

The plastic man would grow up surrounded by unbreakable toys, rounded corners, unscuffable walls, warpless windows, dirt-proof fabrics, and lightweight cars and planes and boats. The indignities of old age would be lessened with plastic glasses and dentures until death carried the plastic man away, at which point he would be buried "hygienically enclosed in a plastic coffin.[2]
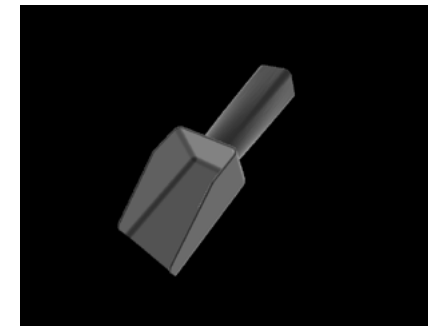
2. Freinkel, Susan. "A Brief History of Plastic's Conquest of the World." *Scientific America*, May 29, 2011. Accessed 2017. https://www.scientificamerican.com/article/a-brief-history-of-plastic-world-conquest/.

Discussion

Programming a Start 01-005

Accurately representing a digital model came only a few years later when Chuck Hull *printed* the first object successfully. What was previously modeled by hand, cast, and made into a mould now could be derived all from digital code. The object was a small vessel that was three centimeters in diameter. It's what Neil Gershenfeld says is,

"the ability to turn data into things and things into data"[3]

Since the 1980's this process has been widely hailed as the next big revolution in manufacturing. The innovation associated with this form of manufacturing allows for design and production to merge tightly and evolve quickly by rapidly prototyping products and goods for consumer markets. An essential part of this discussion is the constant shifting of a 3-D object from a digital artifact (computer rendering) to a physical product.
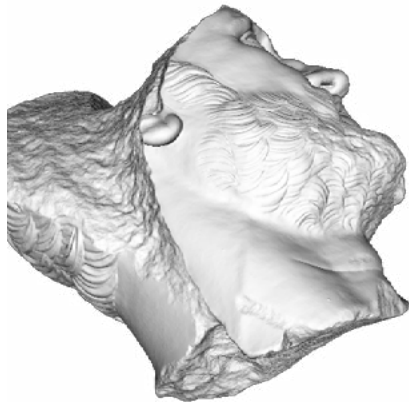
3. Neil Gershenfeld. "How to Make Almost Anything: The Digital Fabrication Revolution," *Foreign Affairs: Vol. 91 #6,* 2012, 43-57

Section 02–
Program InDUSTrial Shift

What caused this shift...Let me inquire. Dear Mr. Edens, our facility is in great need of a new Feed Hopper model 100A. Let's plan a visit one week from this coming Monday. I would love to see the operation I've heard so much about. Yours Truly...

At first glance, the filament stretched for miles. The pungent aroma of refined oil accumulated near the ceiling, only escaping through dust covered vents that once housed filtration systems. What is this refinement process: Extrusion. We take the same approach Earth does in its material creation process- liquid rock forced through fissures, layering, building, on the bed of tectonic tables. It's additive.

InDUSTrial Shift 02-006

In the 20th century western culture, we have seen the rise of industry and its counter, deindustrialization as the century came to a close. Being raised in Pittsburgh, Pennsylvania, a rust-belt city known for its steel manufacturing before its downturn, I have always been interested in massive industrial shifts, the social, political and global effects that disrupt and change societies and the workers involved within these systems. Paralleling industrial changes in regions like the rust-belt is the consumer landscape.

"Abandoned American malls are postcard images for deindustrialization and the bottoming out of an upwardly mobile middle class"[4]

Today, Retailers are transitioning to e-commerce-only models that rely on fulfillment centers serviced by low paid invisible labor and customer service chatbots. Brick-and-mortar stores have come to function as pop-up showrooms and concept spaces. Today, profitable commodities are largely those that trade in the invisible—rooted in financial trading, service, intellectual property, and culture.

Since the time of deindustrialization in America, we have witnessed a boom of digital technologies transforming new modes of production–startups and corporations rise from the ruins of the old industry. Through these changes of displaced skill, knowledge, and community a new set of socio-political and psychological challenges have emerged. We see this new labor built on the contrast between the analog and digital, communal and global, and the quick demands our digital lifestyles create through the way we chose to consume.

4. Yego, Dena Q. "On Ketamine and Added Value." *E-Flux*, May 2017. http://www.e-flux.com/journal/82/133913/on-ketamine-and-added-value/.

Abandoned American Mall, Akron, Ohio

Discussion
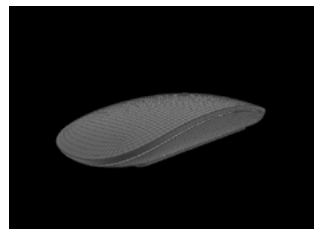
Plastic. Plasticene 02-007
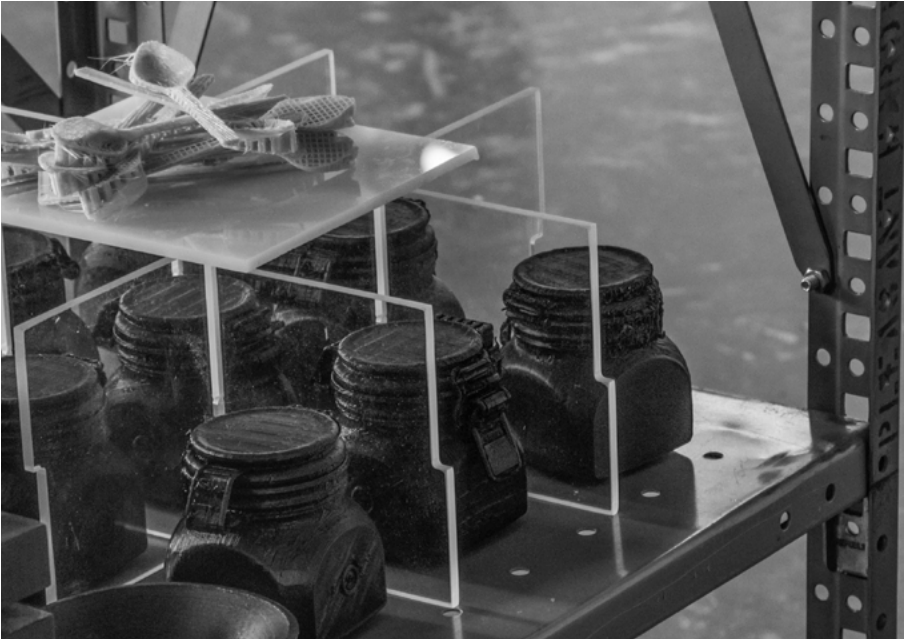
"More than a substance plastic is the very idea of its infinite transformation; as its everyday name indicates, it is ubiquity made visible. It is this, in fact, which makes it a miraculous substance"[5]

Roland Barthes described plastic shortly before his visit in the 1950s to a convention on plastic in Paris. Barthes fascination with the banal capitalist commodities and pop culture clichés extends into today's discussion on plastics role in society. Through countless transformation and its infinite capacity to be formed renders plastic meaningless in itself. The ever adapting qualities of plastic is what marks it as miraculous for Barthes, and that too for the 3-D printing community.

When we think of plastic, we almost always think of a synthetic substance. But the seemingly artificial counterpart to plastic known as celluloid is what we have to thank for the pervasiveness of plastic today. Created from the natural polymers in cotton, the cellulose turned celluloid (for marketing reasons) after countless experiments by John Wesley Hyatt in 1869. Celluloid appeared at a time when the country was changing from an agrarian economy to an industrial one.[5]

People were consuming things that came from factories and plastic was one of the first new materials that would come into the market and replace many hard to find or expensive to process materials. This produced a means for Americans to buy their way into new positions in life. Similar to the discussion on 3-D printing technologies today where new ways of life are expressed through the accompanying machine.

The promise that plastics would free us from the confines of the natural world once synthesized, from the material constraints and limited supplies that had long bounded human activity, are proving to be less than adequate.

Today we are so familiarized with this material. It is a substance of unrivaled utility. The miraculous, 'immediate transformation' of plastic, soon gives way to the mundane, through the rituals of use and waste that organize societies hyperconsumptive neglect.

Daniel Rourke a writer and artist focusing on digital materiality and posthumanism writes about plastic being so close to us for being such a relatively new substance saying, ⟹

5. Barthes, Roland. "Plastics." *Mythologies*, 1957.

"We swaddle our food in plastic, and place it in babies' mouths to aid in their weaning. It protects and insulates the surface of our bodies, and its non-reactive properties allow for its use inside us during medical procedures. But plastic is ultimately ready to be discarded as soon as it is produced, one of the many pathologies of our capitalist yearning for comfort and economic renewal"[6]

What will future archaeologists find digging through landfill heaps produced by capitalist accumulation over the last century? Will they peel back layer by layer of plastic food packaging, baby pacifiers, and unfixable kitchen appliances in a journey back through our times?
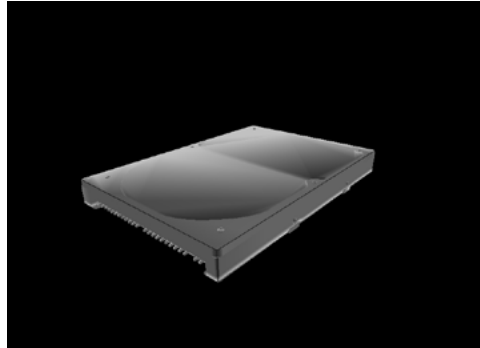
This kipple indicates and organizes the fashions of each decade, not only in testimony to what consumers once valued, but 'as a material act of forgetting.'

What's this Digital Residue? 02-008

We speak of digital residue when we encounter buildups and backlogs of uploaded content. It becomes thick and less penetrable the further you push into it. Websites with thousands and millions of downloadable files coat the server racks like an invasive species continuously reproducing and evolving to best suit its environment. Like plastics material conquest, we are now able to download our way into new forms of living.

6. Allahyari, Moreshin and Daniel Rourke, "The 3D Additivist Cookbook" 2017

Discussion

Section 03–
Accelerate Unresolve

Like ants boring into the earth. Extracting materials to build homes on the surfaces. Colonizing land and taking what is in plain sight and what is perceived as the mineral rights of what lie below. What is decided on to bring to the surface, a once foreign material is now viewed as datasheets and numerical values. A society that has gotten so good at refining raw materials that they are perceived as different substances. Foolishly thinking they are getting multiple (commodities) but repetitively being sold the same thing over and over again.
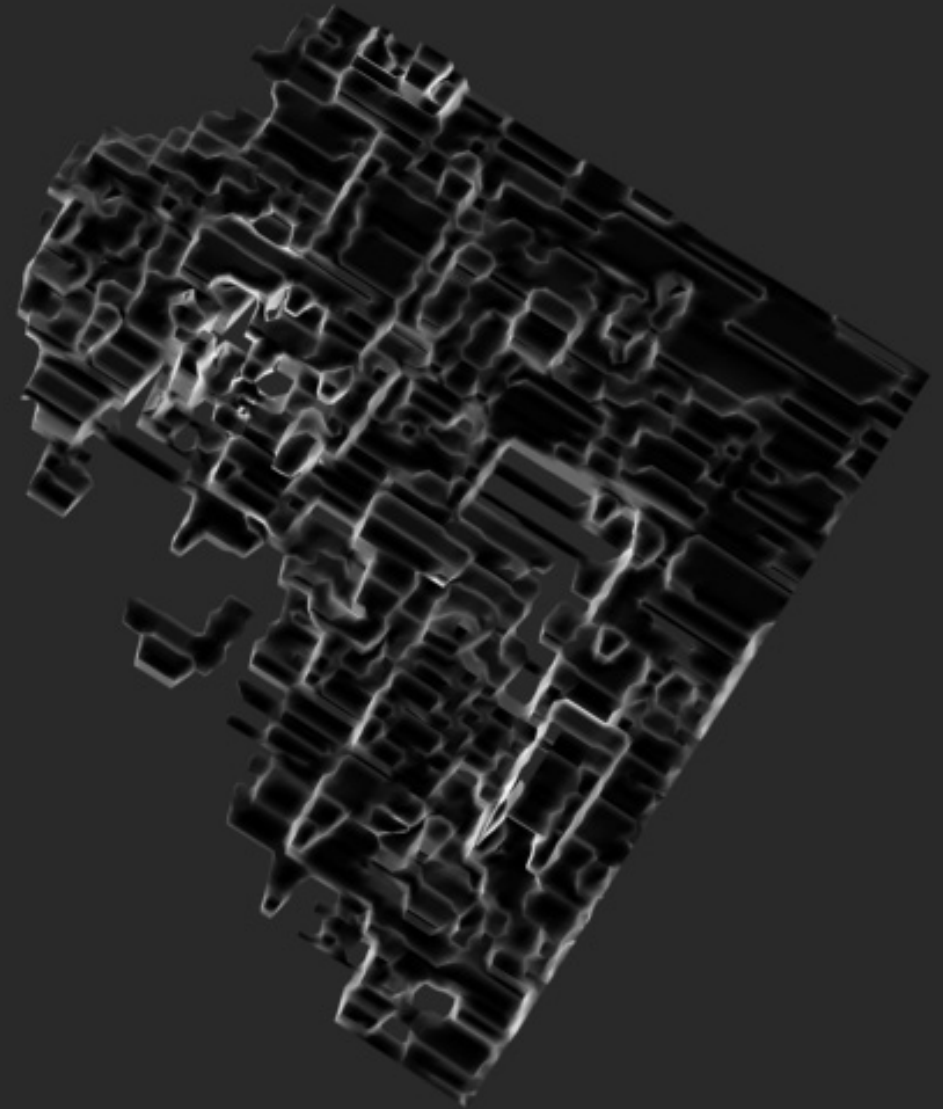
Digital Objects Materializing/Dematerializing 03-009

While plastic continues to pile up in land-fills, products seem to be dematerializing into live streams, downloads, e-books, smartphones apps, we are witnesses a priority of software over hardware. 3-D printing's consumer aim is to bring back the hardware (products) from the software.

The future of 3-D printing promises what was previously commoditized can now be custom-ized online and at home. Whether on a large scale or personally within the domestic space. With software at a closer grasp than ever before we have the ability to download, templetize, mock-up and customize dreamlike objects and render them into new products or what Yuk Hui explains in the most stripped down version as code, data, language, and other digital enti-ties that go into an object.

Digital objects can be viewed as the accumula-tion of code, data, temporal spaces, markup languag-es, and circulation of information within the world of 3-D printing. In contrast to what is considered a natural object (phenomenologically) such as plants and flowers, digital objects transcend our perception into natural objects through exposure and understandings of new technology from where they derive.

Yuk Hui is a computer engineer and philosopher explains a Digital Object as being, "in the dynamic systems that continuously reconfigure the artifacts emerging from industrial innovation, new relativities of scale form and deform, and from this arise unknown circumstances that are always in dynamic excess over and above the systems whence they derive."

Sift 03-010

Left with sifting through the digital debris and crass accumulated objects, tales of transformation still echo. During Barack Obama's 2013 State of the Union Address, he promised world leaders and the United States citizens that he would turn "regions left behind by globalization into global centers for high-tech jobs." And that "3-D printing has the ability to revolutionize the way we make almost everything."[7]

America Makes, a government-backed tech facility utilizing 3-D printing is supported by the Advanced Manufacturing National Program Office (AMNPO). Incharge with convening the network of institutes, as passed in the Revitalize American Manufacturing and Innovation Act of 2014, the AMNPO is staffed by representatives from federal agencies with manufacturing-related missions as well as fellows from manufacturing companies and universities. Lead by the Department of Defense, America Makes is propped up with the help of 30 million dollars by the DoD.[8]

But recent history casts a gloomy shadow over the proclaimed humanist inevitability of 3-D printing. While it may transform some realm of production and goods will be given the further dimension of custom-ization, it is very improbable that 3-D printing will escape the for-profit ethos of corporation and govern-ment that continue to fuel the consumption of new technology.

Statements from America Makes:

Accelerating the adoption of additive manufacturing technologies in the United States to in-crease domestic manufactur-ing competitiveness.

3D printing has the potential to revolution-ize the way we make almost everything.

We Convene...The most brilliant minds from industry, academia, and government to accelerate AM innovation.

We Coordinate...AM technical and workforce data that transforms industry stakeholders.

We Catalyze...Through highly collaborative proj-ects, delivering high value and high impact

AYR (f. 2015, UK), the collective formerly known as AIRBNB Pavilion, is an art collective based in London whose work focuses on con-temporary forms of domes-ticity. Founded by Fabrizio Ballabio, Alessandro Bava, Luis Ortega Covela and Octave Perrault, the col-lective was first formed on the occasion of an exhibi-tion during the opening days of the XIV Architecture Biennale in Venice, which took place in apartments rented on Airbnb. It changed its name to AYR in 2015 fol-lowing legal pressure from the Ireland based company.

7. Ayr. "I'd rather be outside." Artificial Labor, *E-Flux Journal*, 2017
8. Ayr, 5

Automation 03-011

Today, more than ever, digital automation, fablabs, DIY spaces, and the democratization of 3-D printing raises questions about emerging methods of production that are becoming increasingly familiar. The "promise of total automation" was the battle cry of Fordism—technologies labor mediation its weapon. However, automation cannot be reduced entirely to an eco-productive process: it is also a socio-cultural one too.

Cumulative Mess Trajectory 03-012

Whereas the traditional trajectory of a mass-produced object is perceived to move through a cycle from applied research to development, and then to production and distribution coupled with marketing, the designed object is presented to society through advertising and analytical schemes of consumption that culturally impacts the products value. These sorts of models of innovation are often inadequate when it comes to the cultural context of a 3-D printed product, but highly utilized for the promotion of the 3-D printing machine.

First, 3-D printing file allows for a product to continually transform in multiple ways. The user of the file is now presented with infinite amounts of choices. They can designate certain material choices, color, size, shape, and quantity. All this adds to the transformed cultural clout of the produced object by rendering certain objects in unconsidered materials (a plastic printed gun). Tracing the trajectory of a 3-D printed product is difficult since it is always in a state of digitally defaulting. By that I mean constantly changing as it meanders through the Internet of Things.

Warning: A cumulative mess trajectory is a term heavily used in the medical industry. It denotes a series of events where one remedy attempts to fix a problem but creates a new reaction that sets the patient back further and the need for a new remedy is now needed—becoming a series of messy fixes that typically result in death or severe trama.

"Sorting Things Out: Classification and Its Consequences; by Geoffrey C. Bowker & Susan Leigh Star." Reciis 4, no. 5 (2010).

Spime 03-013

In his book *Shaping Things,* Bruce Sterling develops the neologism *Spime*. A *Spime* is considered a futuristic object, one characterized by the Internet of Things.[9] It can be tracked through space and time throughout its lifetime. Objects are designed under these circumstances today. They pass through the internet, on servers, through inboxes, and the cloud. The Internet of Things has changed the way products are designed and how they manifest in the world by allowing distance to collapse between designed object and end use. But a *Spime* takes this cycle of design, product, and use one step further. A *Spime* contests that the products life cycle is more important than its physical properties. Its sales numbers, downloads, CPU, and tracking information is equal weight to the value of the product. Not only for the entity disseminating the product but for the person consuming it. It is a trail of information that allows us to know its origins in a time where complex systems inundate the consumer sector.

Discussion

9. Sterling, Bruce. "Shaping Things". MIT Press, 2005.

Digitally DeFAULTed 03-014

The term *postdigital* addresses the humanization of digital technologies in relation to biological, cultural, and through systems of cyberspace and real space. Reality is interwoven with embodied media, social and physical communication between high tech and high touch experiences and involved in multi-sensory experiences on daily encounters. Postdigital references an experience between media types, globalization, community, and web-enabled peer-produced work created with alternative media through participation, interaction and collaboration.[10]

Connect/Circulate Fabricate 03-015

Like most devices and information, the internet is the platform which 3-D printing utilizes for development. One of the reasons 3-D printing has continued to progress is its reliance on sharing information. It's a technology that for the most part has been built in public view for all to see on the internet. From a social perspective, most of its content lives online. Finding a book about 3-D printing in the library is difficult. Its interconnected roots involve the hacker movement, open source software communities, and fabricators. Yochai Benkler describes this as "commons-based peer production." Which is a sociotechnical system of production that is emerging in the digitally networked environment. In the context of technology, commons-based peer production and its social shaping, it is also political, economic, psychological and historical.

Note:
Benkler's research focuses on commons-based approaches to managing resources in networked environments. He coined the term 'commons-based peer production' to describe collaborative efforts based on sharing information, such as free and open source software and Wikipedia. He also uses the term 'networked information economy' to describe a "system of production, distribution, and consumption of information goods characterized by decentralized individual action carried out through widely distributed, nonmarket means that do not depend on market strategies."

10. Benkler, Yochai. "Peer Production, the Commons, and the Future of the Firm." *Strategic Organization 15*, no. 2 (2016): 264-74. https://www.nyu.edu/projects/nissenbaum/papers/jopp_235.pdf.

Slow Down to Speed Up: Your Software Supercenter 03-016

Paint 3D
3D Slash
Anim8or
AutoQ3D
Community
Autodesk 123D
Blender
BRL-CAD
Clara.io
DAZ Studio
DeleD 3D Editor
DesignSpark Mechanical
Figuro.io
FreeCAD
K-3D
Makers Empire 3D
MikuMikuDANCE
Open CASCADE
OpenSCAD
Quake Army Knife
ROBLOX Studio
Sculptris,
Seamless3d
SelfCad
SweetHome 3D
Truespace,
Wings3D
Vectary
Zmodeler

A current list of 3-D modeling software that prioritize the ability to render products along with other virtual and physical rendering capabilities

As it continues...The plans are finalized, we are receiving two Mechanical Chutes and one Control Condenser. These prototypes are being rendered from the pantograph drawings supplied last week. With the mechanism set at 2x enlargement, we were able to replicate the original drafting to a manageable build scale. I went ahead and extruded hundreds of layers of petrochemicals to accurately represent this model. We now have a physical working prototype. The data may be pending for safe storage i'll assume it's secured once the final print is fulfilled and shipped.
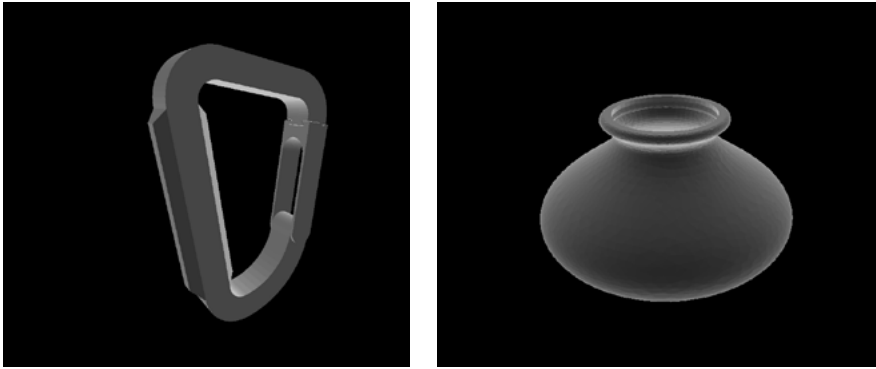
All in the Market 04-017

I browse the digital shelves of the internet (*Thingiverse, MyMiniFactory, GrabCad*) for my first printable object. Using a form of 3-D printing known as Fused Deposition Modeling or FDM the mechanics and inner workings of the printer and software perform an in tune series of events that extrudes fine layers of hot plastic onto a printing surface. This builds the object upwards in layers and allows for the continuous creation to form the object. In contrast to other forms of printing like previously mentioned such as laser or light curing resin or even new technologies like melting metallic powders, FDM is what most people think of when they think 3-D printing. It's a consumer-based method that requires minimal production effort and cost. It is the method of printing that customization, democratization, and personal printing are attached to.

For $12.99 you can purchase 1kg (2.2lbs) of PLA plastic from Amazon. The 1.75mm thick .05mm variance plastic filament is seductive in its neat little spool. From this wound coil anything can be realized.

When *The Pirate Bay*, a torrent site proclaimed in 2012 people will be printing their own shoes in less than twenty years, larger organizations exploited this underground cultures gamble that "consumer 3-D printing" could be an angle to push customizable products to broader markets. Simultaneous patents ran out on specific FDM technology allowing others to capitalize on the market of 3-D printing machines. This entailed many institutions, hobbyist, and makers alike buying into the market when the price dropped in the mid 2010s.

The Promise 04-018

"Stores would become showrooms with no inventory. No shoe would be made until it's ordered, and once that's done, the design would be sent to a printer near the customer's home...Since 3-D designs could be altered as easily as we now change typefaces on a PowerPoint slide, customers could customize shoes before they're made."[11]

The Pirate Bay (sometimes abbreviated to TPB) is an online index of digital content of entertainment media and software. Founded in 2003 by Swedish think tank Piratbyrán, The Pirate Bay allows visitors to search, download, and contribute magnet links and torrent files, which facilitate peer-to-peer file sharing among users of the BitTorrent protocol.

Discussion

11. Manely, Kevin."How 3-D Printing Will Make Manufacturing in America Great Again."http://www.newsweek.com/2016/04/15/3d-hubs-3-d-printers-manufacturing-china-443350.html, 2016

Transformative Technologies
04-019

Everywhere we turn today, a remarkable new device promises to transform our lives. But at what cost? In this urgent Information Age, reconsidering our relationship with the networked objects, services and spaces that promise us customization, A better way of living, saved time, less environmental impact, personalization, reduced labor...and so on... brings to question what becomes material, what becomes physical, and what stays as data and information.

Thinking about our dependence on the smartphone to navigate almost every aspect of our existence. We're told that innovations—from augmented-reality interfaces and virtual assistants to autonomous delivery drones and self-driving cars—will make life easier, more convenient and more productive. [12]

PRIME

Shop Easter essentials: FREE 2-hour delivery

prime now
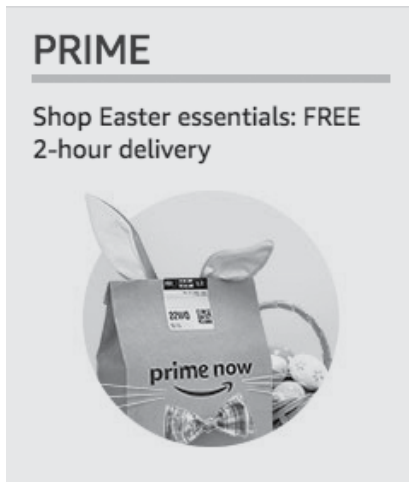
12. Greenfield, Adam. "Radical Technologies: The Design of Everyday Life" 2018.

Transformation of Utilitarian .Obj 04-020

Revolutionizing the utilitarian object is one of 3-D printings goals, among an extensive list of others. Transforming the digital blank canvas of a *thing* into a personalized object, and doing it with ease and convenience is what makes this technology appealing. George Basalla addresses a transformed utilitarian object as, "ordinary tools, utensils, weapons, devices, and machines that have been refashioned, altered, or transformed so that they may assume new and important social and cultural functions."[5] Through their accumulation, the 3-D printed object becomes a signifier of a complex social functions.

Through the transformation of digital data extruded in liquid plastic what appears is a representation. Objects printed with 3-D technology are clearly recognizable as the imagined part, tool, or what may have been printed. What has not changed is the intent in which the object is made. A door knob is printed because to some extent we want it to be a door knob. The utility of a door knob does not change when the intent to fabricate a door knob arises.

Aesthetically, the 3-D print process transforms an object into a foreign visual language. It is recognizable as a byproduct of cheap plastic manufacturing; simultaneously it is a complex artifact of technology when considering the means of production, surface quality, and material in which it is rendered. It's a poster child for the new sleek tech that everyone marvels over because of its unfamiliarity in process and appearance. It's as if the process is directly embedded in the object, more explicitly than most encountered objects.

Discussion

Phased Phrase 04-021

The phrase "consumer 3-D printing" is misleading, with its connotation that the consumer is the one who owns and operates the 3-D printer. For this to happen, the printer must be easy to use, affordable, accessible, and safe—all things that describe today's "consumer 3D printers": your MakerBots, your Lulzbots, and your Ultimakers. These descriptions are the driving force behind the sales and perceived benefits of this new technology. But what happens when the driving force behind the technology fails to deliver on its role, both as a means of cutting consumer cost and creating customization? Moving beyond these comforts and into the realm of fabrica-tion, I want to address the realities of consumer printing and its promise of new forms of consumption.

"3-D printing's fall from grace accelerated as people came to realize that the industry's current printers' actual capabilities were not as miraculous as everyone thought. When people started to understand that they were limited to print-ing plastic Yoda heads and knobs for their dishwashers—not food, clothing, and cars—the bubble burst."[13]

EASY-TO-USE ECOSYSTEM

QUICK SETUP   EASY TO USE   FILAMENT

The ThingMaker 3D printer is quick and easy to set up – just plug it in and wirelessly link it to the ThingMaker Design™ app. Simply push a button to export your files and you'll be printing in no time!

Warning! Customize 04-022

When considering customization and consumer printing the first barrier typically becomes the fact that customizing a 3-D object is difficult let alone even considering addressing why we feel the need to customize things in the first place. For a designer or non-designer, it is not just about the vision; it is about the work involved to personalize an object. Most software requires a steep learning curve and exceeds a willingness to learn. Not only is an understanding of geometry and engineering involved to make a realized part, but in-depth knowledge of the machines function is also needed (then why don't we just buy something similar off Amazon?)

Weighing through all of the thick technical jargon and difficul-ties associated with it brings to question do people even want cus-tomization or is it just a catchy buzzword that trails convenience. One may be able to transform an object and adapt it for a certain use using this technology, but expectations often lead to futile outcomes and questions of what this high-tech product is meant to change in relation to users quality and time spent fabricating.

Overcoming these problems is not out of the question. If the promise of creating your own goods at home whenever needed is the end result, people will endure the early adopting challenges.

Discussion

13. "Expectations vs. Reality: The Future of Consumer 3D Printing." Mosaic Manufacturing. Accessed 2018. https://www.mosaicmanufacturing.com/blogs/news/expectations-vs-reality-the-future-of-consumer-3d-printing.

Section 05–
Possibilities

Shaped and reshaped through trans-portation between 5g networks and the Trust å Security Cloud team we've made it back to the reservoir rock. The material enactment with its willingness to consume all in its path morphed into a fault line. An open fissure, a continuum of possibilities. The only way out of a technosociety is through a constant (de)materializing newer one—learning whatever resilience, ingenuity, skills, and detachment that is required.

Perhapstechnobuyproduct 05-023

With plastic came built-in accessibility through the means of cheap material and production costs. Once synthesized in a lab, plastics conquest was to provide objects and necessities for all. As we see today, the shortcomings of the modern era when standardization and industrial production claimed to revolutionize consumer markets, and make products available for all for little to no money has left a vast number of issues in its enthusiastic wake. These deceptive acts in technology are carried out in numerous ways. 3-D printing and automation claim salvations today like that of the post-war industrial revolution that peaked in the 1970s.
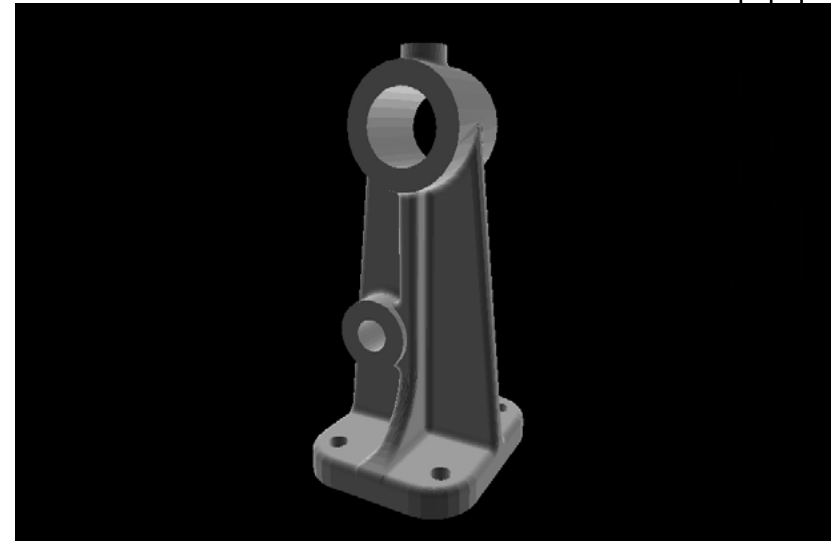

Discussion

Quasi-Object 05-024

Today, the 3-D printed object has become what Bruno Latour describes as a quasi-object. In Latour's series of writings the *Parliament of Things*, he first describes quasi-objects as to be used as white screens on which society projects its cinema. Secondly, they become so powerful that they begin to shape society, while the social construction of the sciences that have produced them remains invisible—politics and private companies act as social scientists in this case. The 3-D print offer only a surface for the projection of our social needs and interests. To become a social scientist, Latour states, "is to realize that the inner properties of objects do not count, that they are mere receptacles for human categories."[14] Imbued with technological advances 3-D printing is the perfect shell to offer false claims to a society at large.
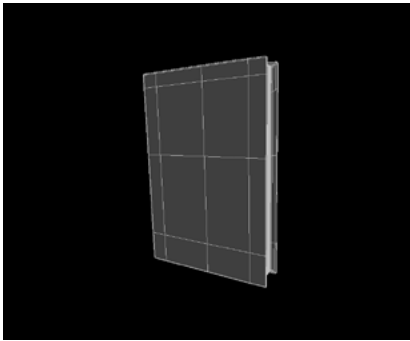
False Start 05-025

Without question, some positive transformations are being made with 3-D printing, some goods are cheaper, and services more accessible, but this new technology is not changing society the way it was promised. Without policies defining socioeconomic deployment of new forms of manufacturing and consumption fail to revolutionize society at the consumer level.


Shift Blame 05-026

The word "impact" carries with it the techno-burden of change and revolution when spoken by the tech industry. Paired with discussion around the "shift" and urgency to adapt to new forms of productions, or else be left behind, there is a general sense that politics and citizens have very little power in the face of technological advancements. It is as if history would unfold with or without anyone. This sense of inevitability implies that the contemporary promise is grounded in a technological delay rather than a political inability to take action. Technology gets swept up in the latency of politics with regards to progression, making the claims nobody's fault.[15] Those early-adopters who get caught up in new technology get considered investors for a not entirely realized product. Echoing the forms of planned obsolescence and design scarcity where adapting and changing become our only survival method.

Discussion

14. Latour, Bruno, and Fien Veldman. "The Parliament of Things." The Parliament of Things. www.theparliamentofthings.org.

15. Ayr.

The Resilience of the Debris Pile 05-027

Rather than continue to add to the mounting debris pile of failed promises, a real honesty is needed when it comes to consequences of future technology meant to change the 3-D printing consumer landscape. Perhaps the important thing to note is the fact that consumer printing has yet to find its natural state. Its constant fluctuation between consumer gimmick, life changer, and oddball-hobbyist third-arm makes this technology hard to pin down which may aid in its overall resilience to completely fail. Identifying this new form of technology this way allows for further contemplating and for it to not be completely dismissed as a failure to aid in the promise to one day be self-producing goods.
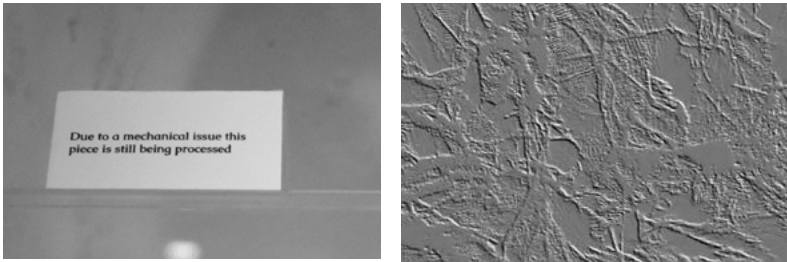
If the mega-shopping malls are bottoming-out and products are increasingly becoming dispersed into the stream, download economy, DIY, and at home delivery where does 3D printings future situate itself?

At its hype in 2014 until now it remains in a state of slow transformation along side the transformation of products with a willingness for technology, material, and component integration to catch up to the consumer world.

The perception of transforming consumer relationships, society and our way of living may still be in the prototyping phase. In actuality 3-D printing and its network of information is building on the demands of products becoming closer and closer to digital objects and less like plastic downloadable knobs for your dishwasher. I'm interested in seeing what happens to the information we feed into the system and how that will be the catalyst for the continued development of 3-D printings aspirational goals of one day transcending traditional consumer markets.
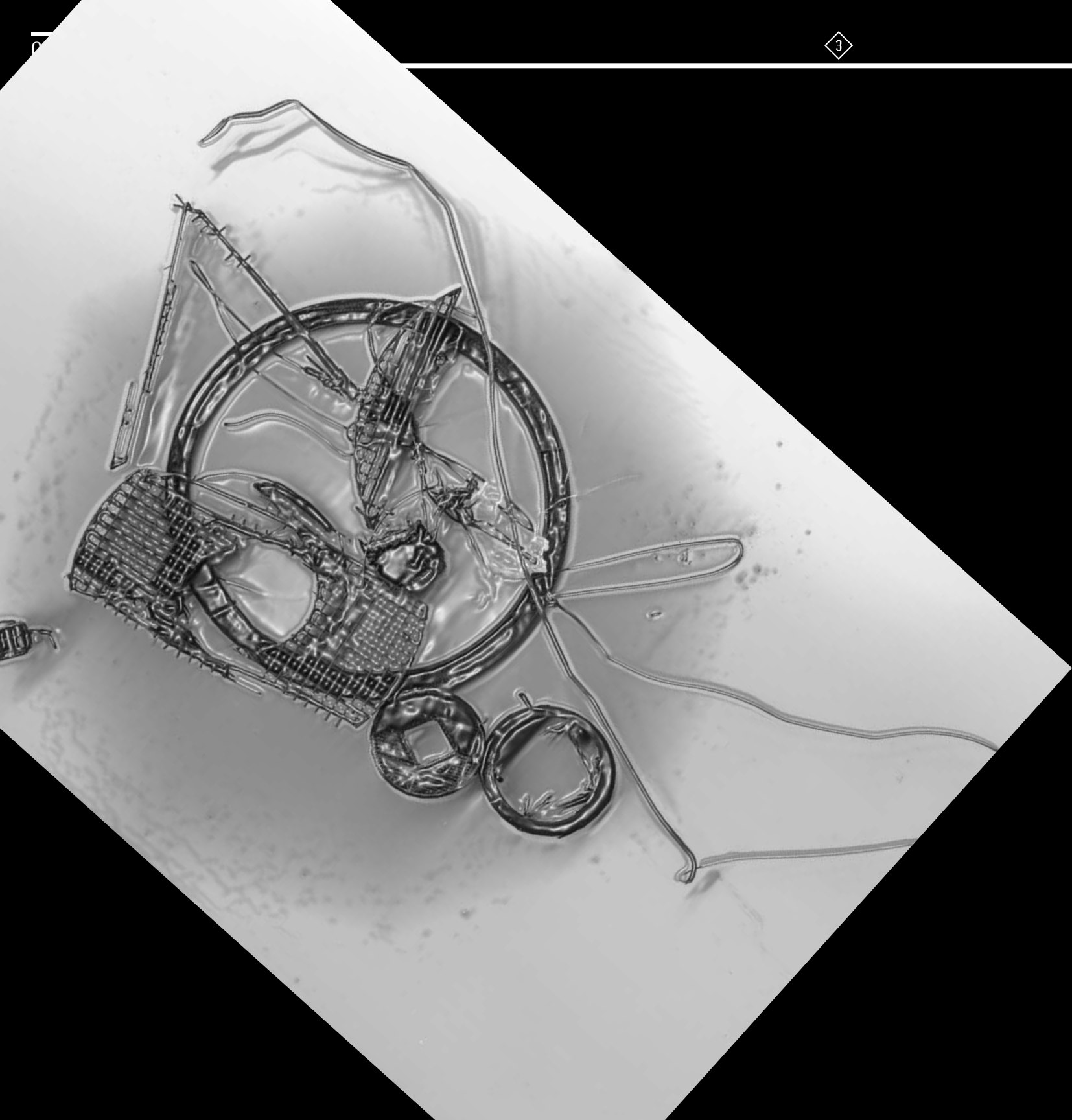
Disccusion

Fig. 7

Figure 7: candle stick holder

A 5 hour print at .4mm layer height with no raft. No supports needed to print at low resolution.

Process

Found objects, risograph prints, fabricated light box, concrete, metal shelves, print on de-mand book, plexiglas, 3-D prints, L.E.D light, digital display, mixed media, vinyl, 4-channel au-dio, cardboard, laser print, 3-D rendering, HD video, inkjet print, laser en-graving, wood, stone, polymer resin

2016–2018

Reording the Cabinet　*Metal filing cabinet, found objects, PDF archive, reclaimed wood*

2016

size variable

I often relate the experience of file finding in my studio to trips exploring abandoned sites. My initial research into sites of production lead me to my first attempts to start understanding networks of production. Like searching for a file that may or may not exist in the cabinet, the places I explore are somewhat calculated risks. What is unclear is what information I may find along the way. As a studio practice, I created an emerging collection when juxtaposing pairs of artifacts from the Southern Mill Supply Co., an abandoned textile factory. The blending of these documents created the structure of the filing cabinet project. These documents have continued to be active agents in experimental writings and world building.

The organization of the container is a chaotic, nonlinear story—a subjective interpretation. In its current state, I am presenting the documentation in both physical and digital form next to each other. This work addresses the level of information that is obtained when viewing unfamiliar documentation on a digital platform as compared to a physical archive.
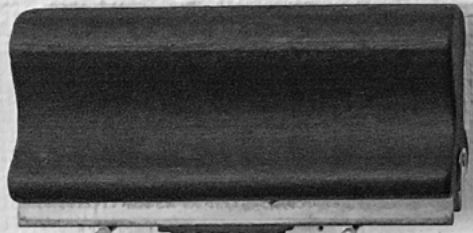
Process

SAVINGS ACCOUNT
TEMPORARY RECEIPT

DATE | W/MO | INTEREST | WITHDRAWALS | SAVINGS DEPOSITS | CURRENT BALANCE

363611

4769

67-50
532

BANK, P.S.B.
COLUMBIA

1.75

DOLLARS

GEORGIA

Bills Conron
CA DL
2J56-46-3390

0010175

☆ BORROW WHERE YOU SAVE ☆ BORROW
YOU SAVE ☆ BORROW WHERE YOU SAVE ☆

MFG BY
HPC INC
PARK IL USA

Dear Sunday School Teacher And Worker:
Our regular monthly teachers and workers meeting
will be held at 7:30 P.M. on Friday, September 22
at the home of the Denisons, 5815 S. Tripp Ave.
If you have a Rally Day book please bring it along.
The Lord expects you to be there. Come with your
....our.

REGULAR SCHEDULE FOLLOWED.

S SSUPERINTENDENT   S SECRETARY

| NAME W. E. Perry | | | | |
| DATE 12/3/75 | | NO. Watchman | | |

		EXTRA TIME		REGULAR TIME
1ST. DAY	A.M.		IN OUT	
	NOON		IN OUT	6 600
	P.M.		IN OUT	6 1200
2ND. DAY	A.M.		IN OUT	
	NOON		IN OUT	6 600
	P.M.		IN OUT	6 1200
3RD. DAY	A.M.		IN OUT	
	NOON		IN OUT	6 600
	P.M.		IN OUT	6 1200
4TH. DAY	A.M.		IN OUT	
	NOON		IN OUT	900
	P.M.		IN OUT	3 1200
5TH. DAY	A.M.		IN OUT	
	NOON		IN OUT	
	P.M.		IN OUT	
6TH. DAY	A.M.		IN OUT	+12 hrs.
	NOON		IN OUT	Hol. Pay
	P.M.		IN OUT	(2 day 6 hrs.)
7TH. DAY	A.M.		IN OUT	
	NOON		IN OUT	
	P.M.		IN OUT	

Reg. Hrs. / Rate / Amount
Extra Hrs. / Rate / Amount
Fed. Old Age Ben.
Fed. Withholding Tax
State Withholding Tax
Insurance
Government Bonds
Miscellaneous
Total
Net Wages

| TOTAL | TOTAL 33 |

Correct as shown, Pay Received
W. E. Perry

Lathem Time Recorder Co., Atlanta, Ga.
Printed and Rotary Cut in U.S.A.

Form 1900L

Response Books: Reordering the Cabinet

Found paper, perfect bound book, spiral bound bok, typewriter, office outfit stamp

2016

Response Book was an exercise to create a response and evoke meaning from old documents that were sourced from an abandoned textile mill in Athens, GA that would later play a role in a larger collaborate study (355). I chose to respond to work orders, financial documents, and other business copy to revive the forgotten business by republishing old documents with additional information. I would like to continue doing this in other formats to explore new forms of generating content and design decisions that use discarded documents as a form of communication to discuss current industrial and political issues.

Process
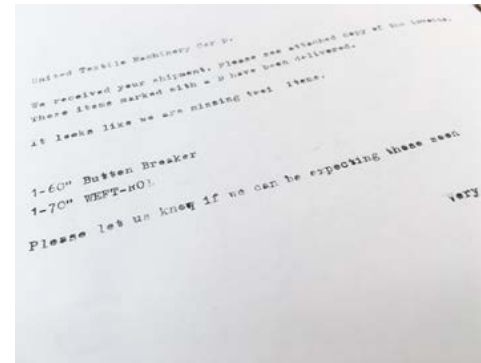
Redeposit $244.32 less $22.25
Regular $62.17
284.24

DATE	FROM	TRAVEL TO	MI.	BREAK FAST	LUNCH
6/11					
6/12	Gurlle – Pod	(39.90)			(9.95)
6/13	Pod – Gurlle – Athens	(15.91)	5.80		7.40
6/14	Athens Grayson Opelika	(11.55)	2.55	1.95	6.85
6/15	Opelika Waverland		2.32	2.10	6.20
6/16	La Grange Athens Gurlle Gurlle – Gastonia –				2.50
6/17	Gurlle				
WEEKLY TOTALS			58.36	10.67	65.55

AUTO EXPENSE	MILES @	AMOUNT	GAS/OIL	PARKING	MAINTENANCE	TOLLS
SUN						
MON			(5.45)	X		
TUES						
WED			(9.40)	X		
THURS			(12.85)			
FRI			(11.70)			
SAT						
WEEKLY TOTALS						

* ENTER DAILY TOTALS IN AUTO COLUMN ABOVE

Credit Cards or Travel Service
If you use credit cards, you still must enter and support expenditures. If the expense is billed directly to and paid by the company, suitable memo notation should be made on the day the expenditure was incurred. This will facilitate matching the payment with the supporting data.

Expenses charged direct to the Company (do not include in reimbursement total)

Railways or other J&B.W. ... Days – Rd Trip Pro		352	94
Auto Rental			
Other Gas/oil – 9.40 +5.75 + 7.10		30	26
	Total	22	25

Gloria,
  I mailed the expense report plus receipts for Ms. Bolton (week-ending 6-7-75) and some how it must have been misplaced in the mail — it was sent about a day prior to the invoice #253.
  I am mailing a copy of the original report — if you need anything else — please me know.

Pam

355   *Found objects, site spe-*   *2016–*
     cific installation, objects   *2017*
     ordered by Alexis Spina
     & Katherine Miller

355 was a group exhibition I participated in at the University of Georgia with two other artists, Alexis Spina and Katherine Miller. Through rep- etition, 2,000 pieces of architectural and indus- trial waste consumed the floor in a strategic grid pattern in an abandoned warehouse in Athens, GA. The assembled objects were temporarily transported into the gallery space during the exhibition as an installation by Spina and Miller. Through dialog with the objects the exhibition questioned object agency and how these forms bring awareness to a former site of production.

Ultimately through word of mouth the space became activated, drawing onlookers intrigued by the presence of the objects. The idea was presented in a lecture at the University and was accepted as a show at the Lamar Dodd School of Art. A five volume viewbook consisting of 2,000 pages displaying all of the collected objects indi- vidually in a catalog was prepared for the show.

Simulated Cut Ups   *Collage found paper,*   *2016–*
                             wheat paste, inkjet print   *2017*

                             14" x 32"

These studies consist of found documents and
digital prints of the originals overprinted on the
document itself. The fragments of paper were
placed together using chance interactions with
the documents to create non-linear narratives
of the location they were resurrected from. Digi-
tally overprinting the image of the physical paper
acts as a secondary adhesive to hold the physical
forms together.
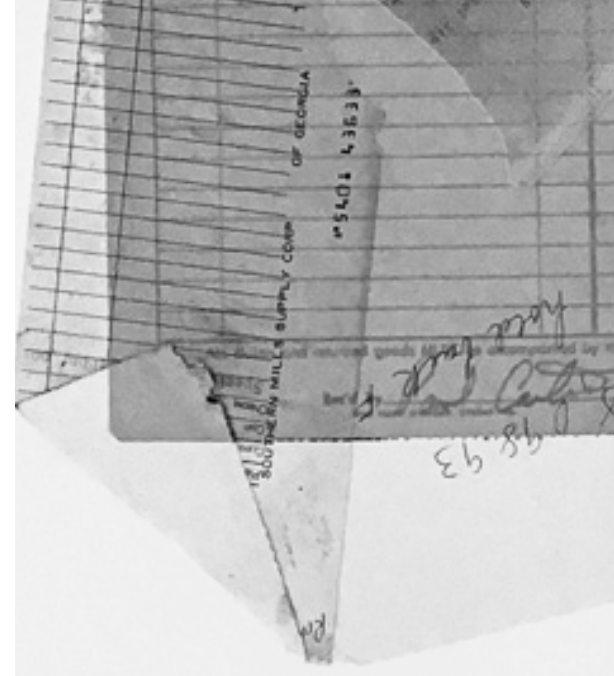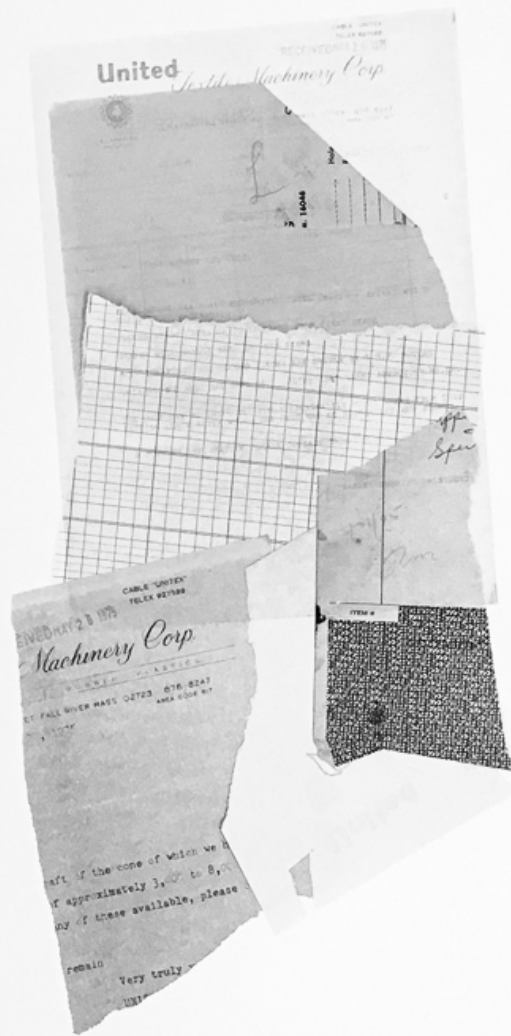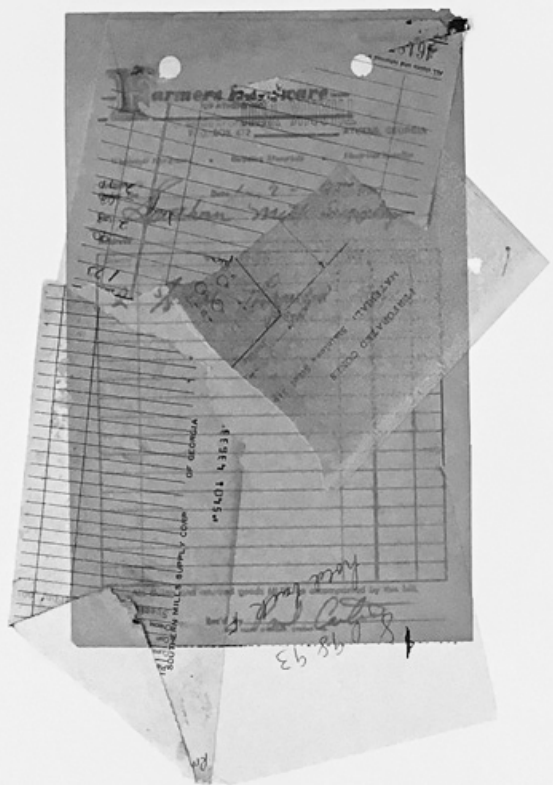
Sifting Through the T Horizon   *Projection mapped HD video, found audio*   *2016*

Trash: a dispersed illicit mat of compounds and materials, devices and objects that would never occur in nature. In our trash-generating society, we are doing as nature does: reproducing to our limits. Nature creates life, diversity, and a habitable planet within the cycles of nature. Humans then interfere with the natural cycle. This exploitation occurs through a cyclical building up, tearing down, and leaving behind materials as waste. Decomposing organic matter breaks down to produce natural litter. Our waste sits patiently, inflicting an unsightly and toxic surplus within ecosystems. The problem of overproduction, poor recycling programs, and cultural ignorance of pollution

is not going away. In response, I propose a reform of the Organic Horizon classification system to help aid comprehension of what's occurring when society creates layers of trash in the environment. Revisiting a current scientific classification system may help us understand this distorted cycle that plagues the natural environment. Through my experience, I created a looping video that incorporated a deteriorating landscape while superimposed letterforms depicting the scientific classification turned into ligatures, distorted by the letter "t" symbolizing trash.

Process
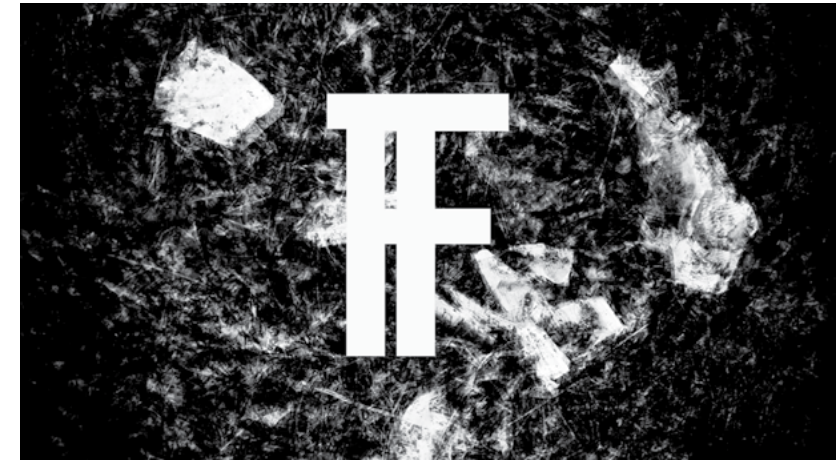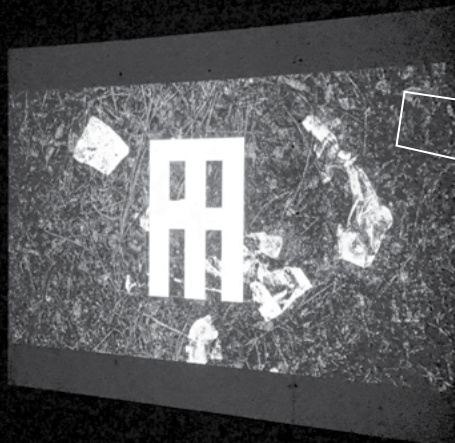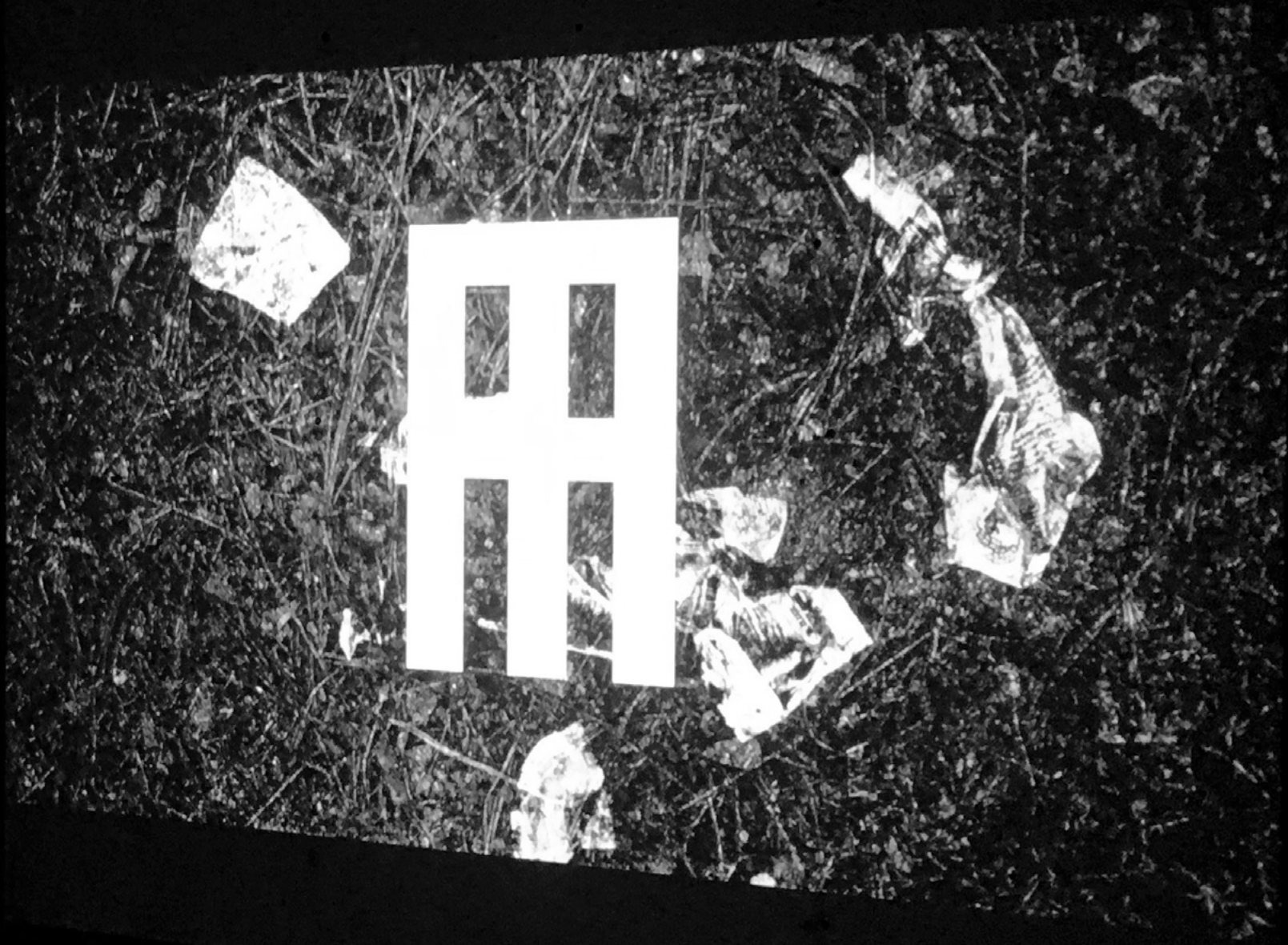
Installation view, projection mapped video

of the bad duplicate   *Risograph print from pan-*
                          tograph tracing of discarded
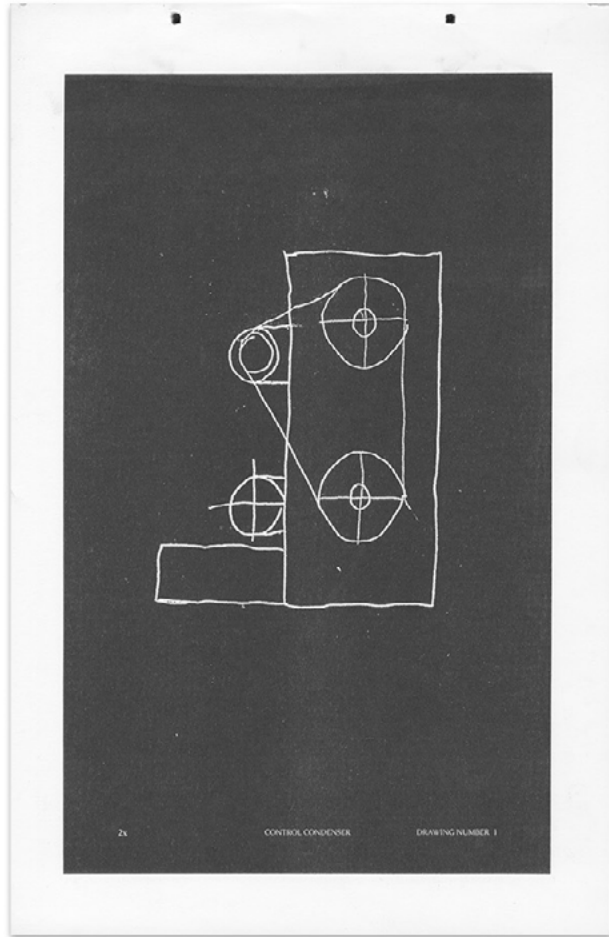   *architectural blueprints*

                          11" x 17"
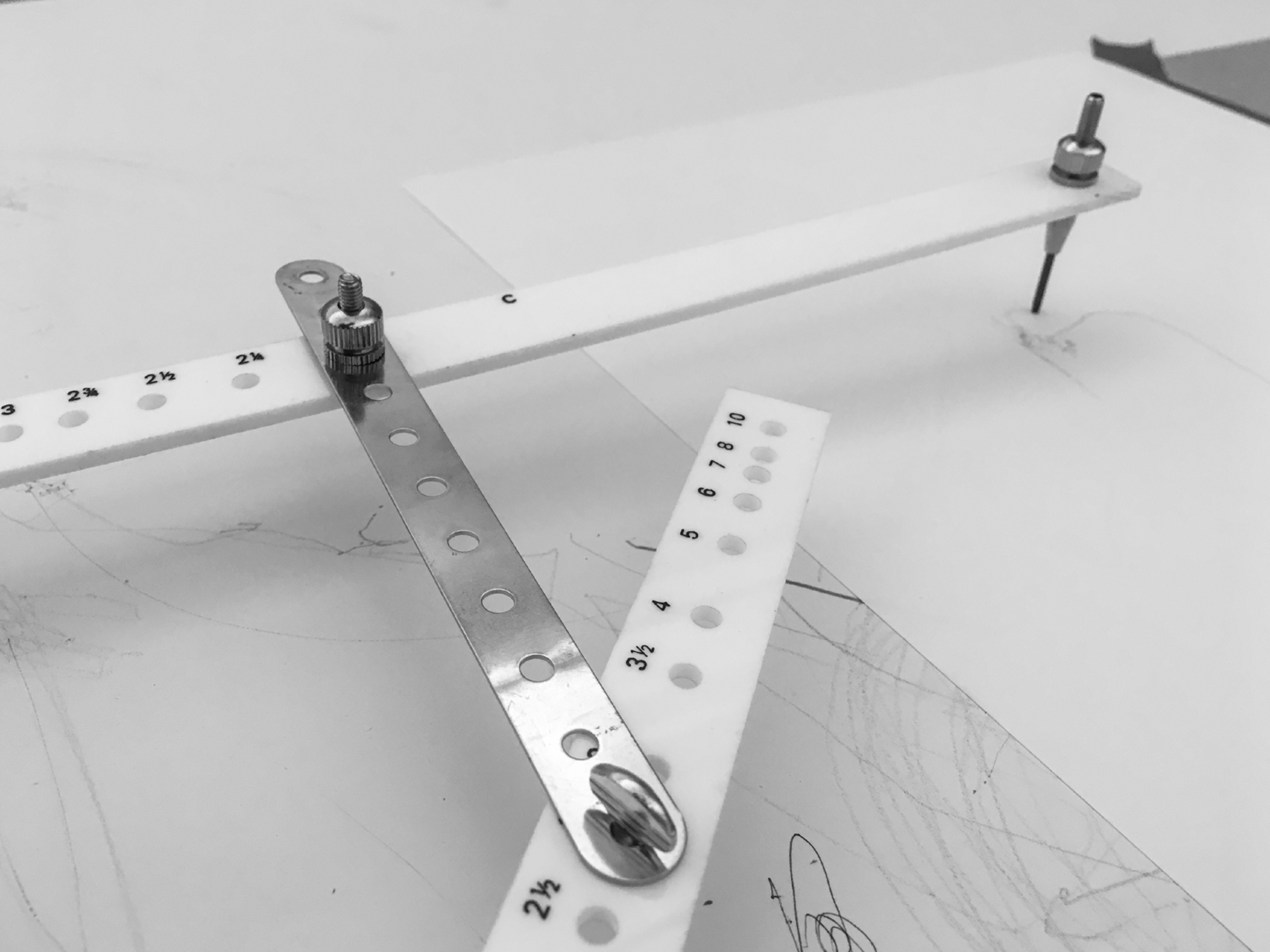
                                                    2017

In this work, I challenge the forms a copy can take from an
original (in this case obsolete technical drawings), and how
removed a form can be before it is no longer considered a copy.
The tools for copying open new opportunities to create some-
thing more authentic than the intended duplicate. Using the
pantograph for reproduction, I am interested in the quirks of
the machine through its use. The new product enters a realm
between existing as a copy and being an entirely new thing.
The important part of my investigation lies with the process
and intention to create a replica. Without the initial plan, any-
thing can be a substitute for the copy object. The mechanical
errors along with user input when attempting to recreate an
original is what drives the formal characteristics of the work.
My curiosity in these methods has led to the realization that a
poor copy, one that does not mimic the original through partic-
ular means, becomes an entirely new object—one that doesn't
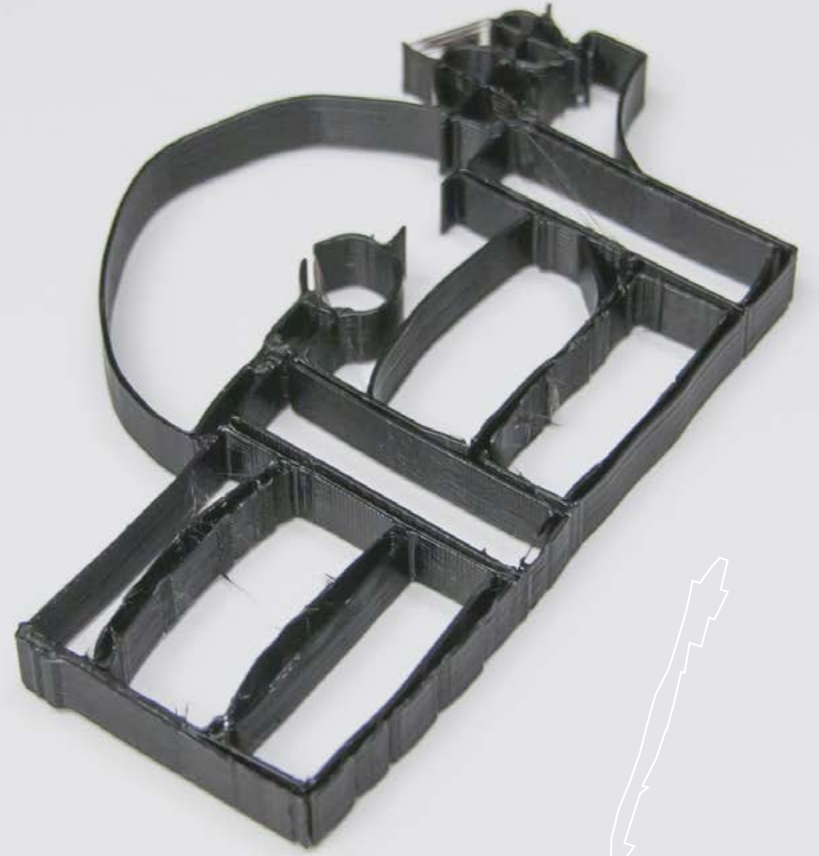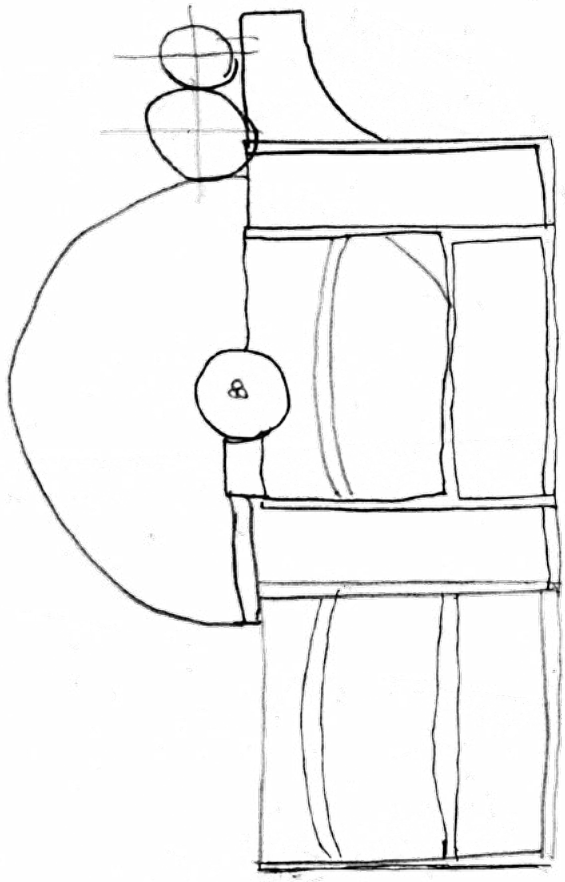fulfil it's original purpose. As an exercise to see these copies in
a new way,

I created unfamiliar 3-D objects copied from the drawings. The
tangible objects create connections to our familiarity of hand-
held devices and become latent objects of their own–intriguing
pieces of degraded images that are easily reproducible, and
question my interests with the possibility of use.

CONTROL CONDENSER   DRAWING NUMBER 1

Process

2x   CONTROL CONDENSER   DRAWING NUMBER 1

2x   VERTICAL FINE OPENER   DRAWING NUMBER 2

2x   REVERSE CHUTE FEED   DRAWING NUMBER 3
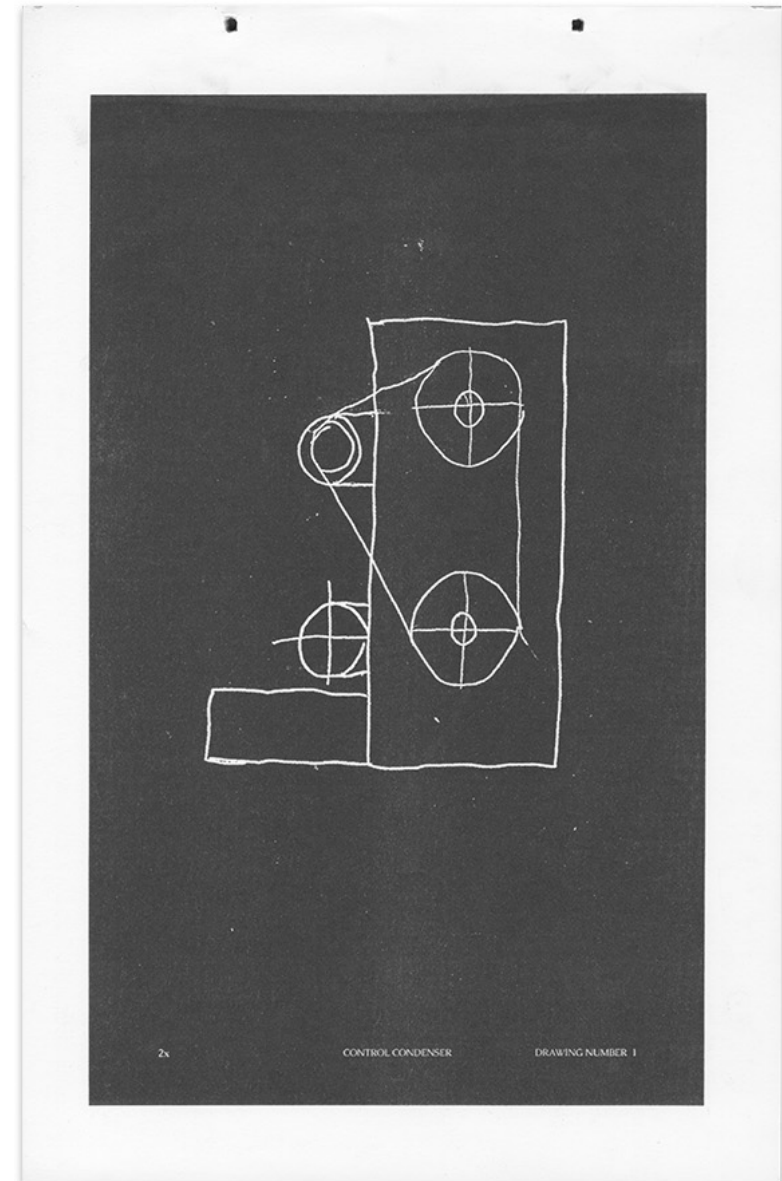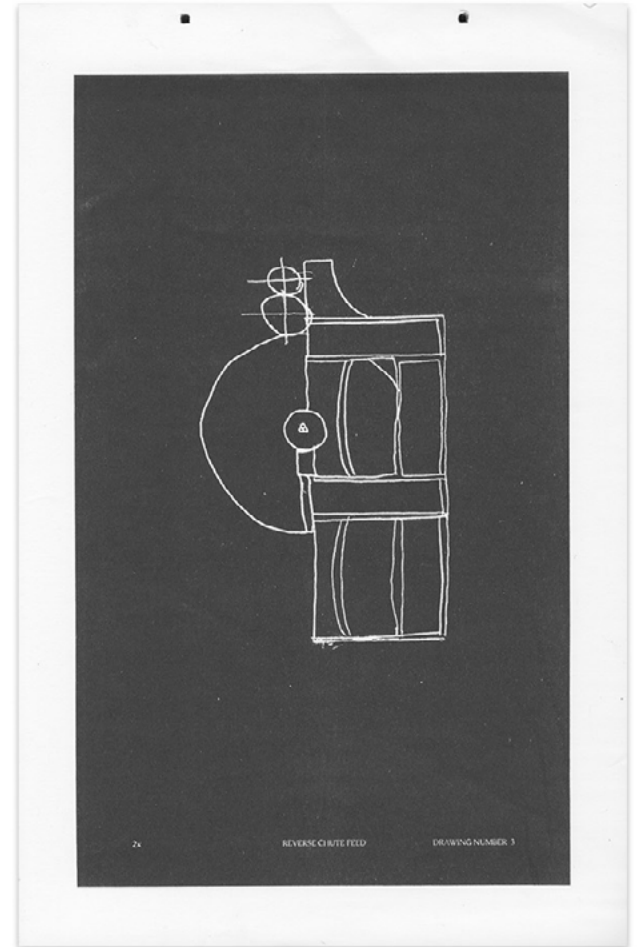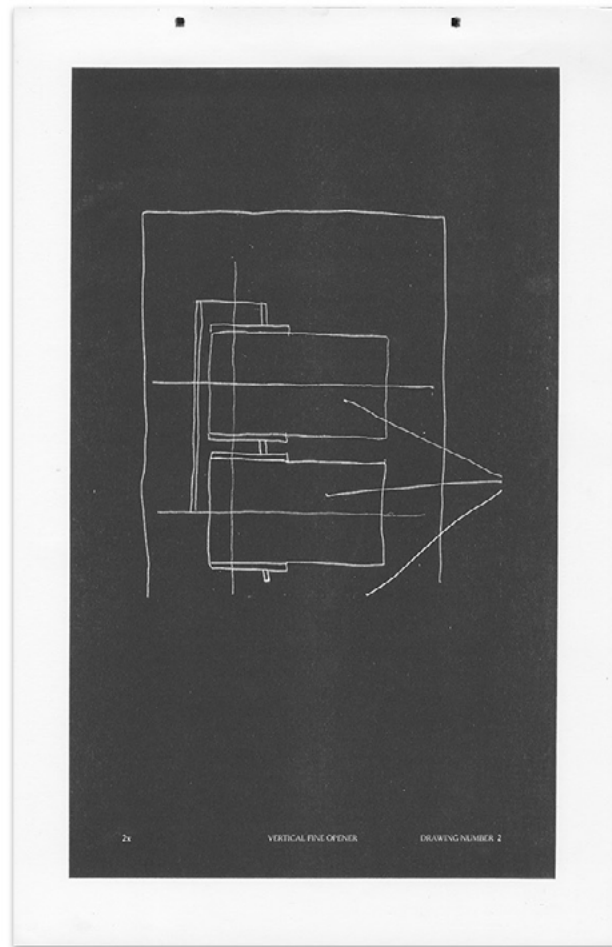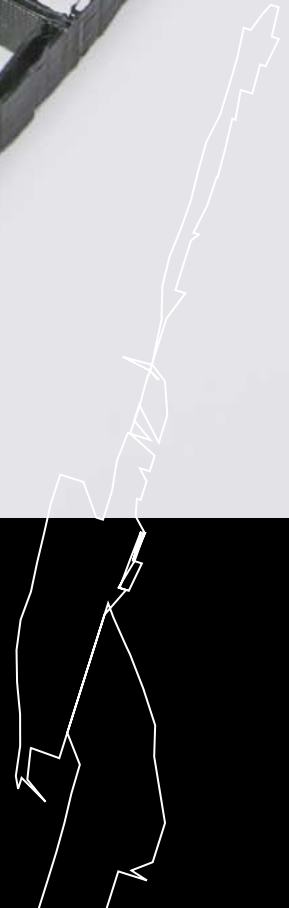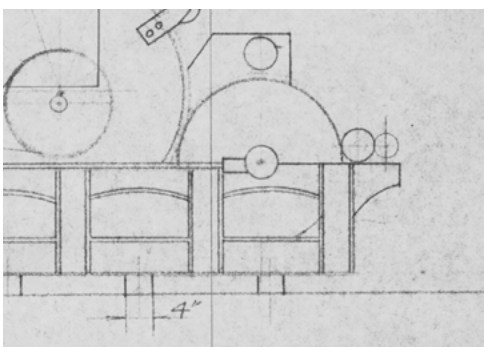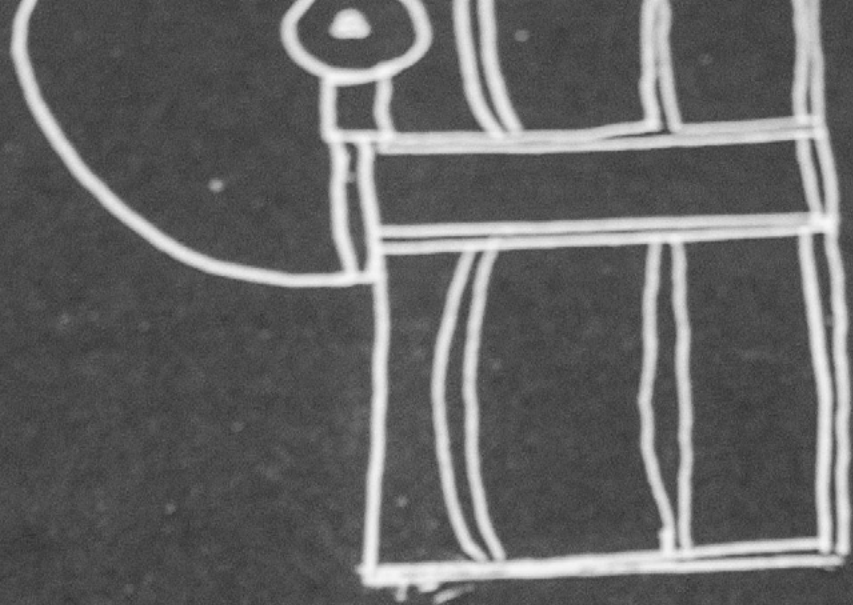
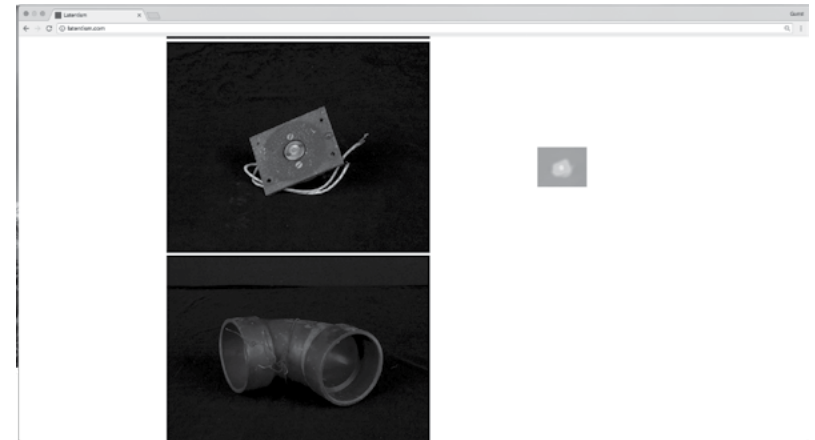REVERSE CHUTE FEED   DRAWING NUMBER 3
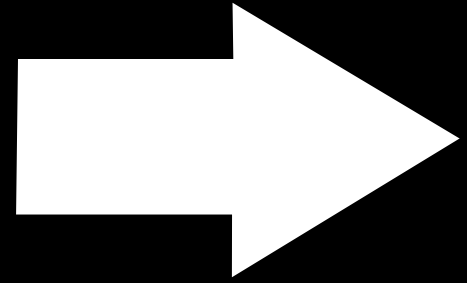
www.latentism.com *Interactive commerce website* *2017*
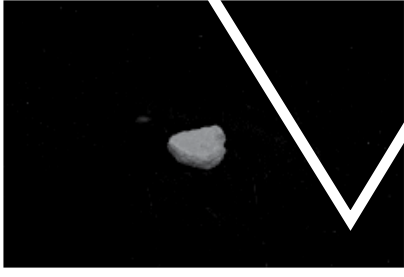
Bid, barter, trade—receive the unexpected.
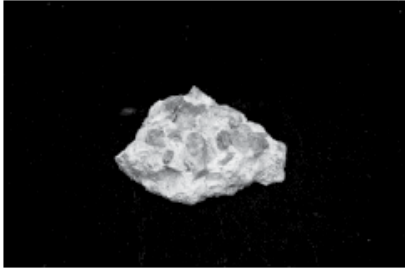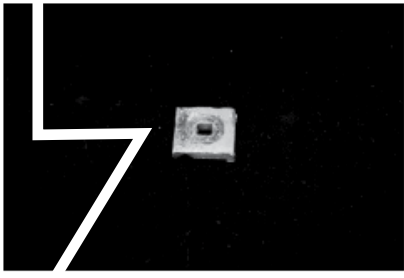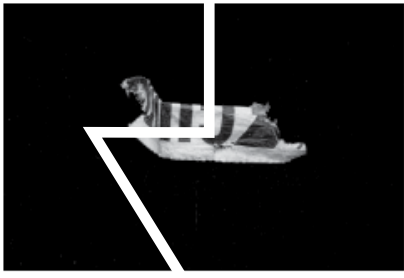
IN
USE
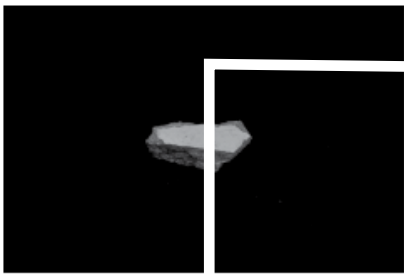
SAVE →

latentism.com/toolbox-2.html

latentism.com/toolbox-2.html
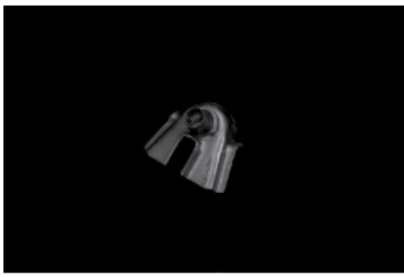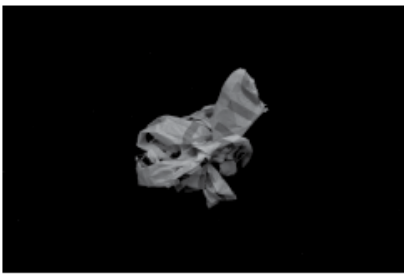
compartment 01 compartment 02 compartment 03 L
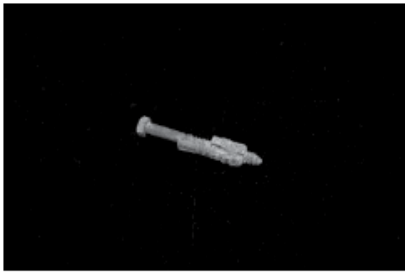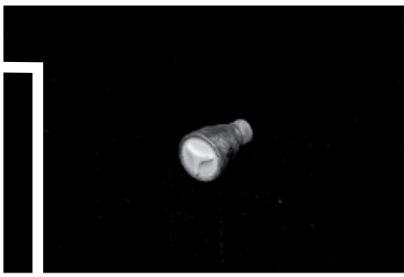
IN USE

19-52-58

Toolbox

IN USE

a distinct practice, system (of a quality or state) existing but not yet developed or manifest; hidden; concealed.
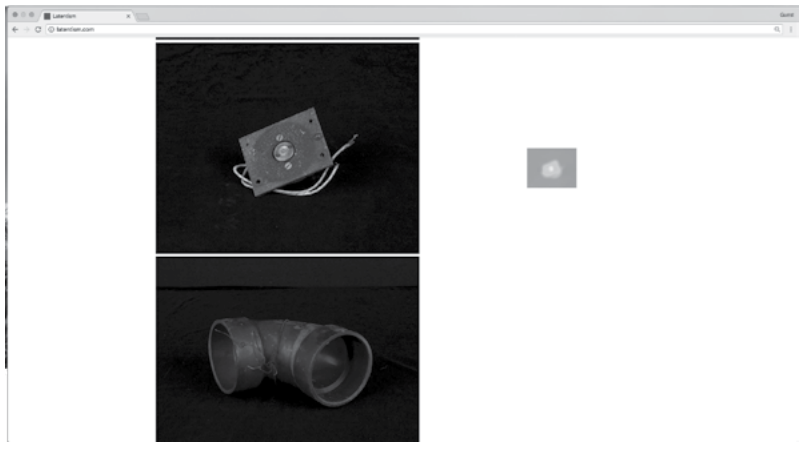
Inquire #01

End: 04/21/2017 at 15:00

thermoplastic, silver solder, copper, glass cloth, aluminium

20.1702015

Future Items For Auction

20.1702001
20.1702002
20.1702003
20.1702004
20.1702005
20.1702006
20.1702007
20.1702008

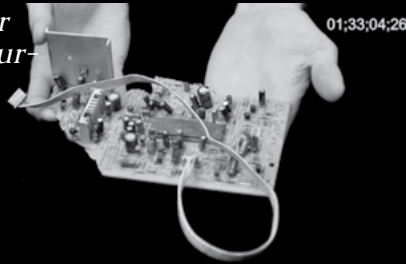*Save Now*   *Found sign board,*   *2017*
                    inkjet print, fabricated
                    lightbox, vinyl, video
                    loop, found cinder
                    blocks, found repur-
   *posed lightbox*

01;33;04;26

In this work, I created multiple modes of rep-
resentation with products that were unfamiliar
and difficult to discern. I presented raw and
unpolished worn materials as consumer goods to
begin questioning the consumer value and mar-
ketability of industry waste. I wanted to focus on
time as an important element in this work. On
multiple levels, I tried to communicate a sense of
urgency to buy that is seen in western society. I
also wanted to create an experience that worked
on multiple levels of perceived reality. From the
static sign board to the semi-virtual blinking
sign, to ensuing the viewer with a transient-like
video. With the physical work, I wanted to create
a series of connections between materials and
materialism through juxtaposition of repurposed
worn materials and fresh applications such as
cut vinyl to heighten our sense of the temporary.
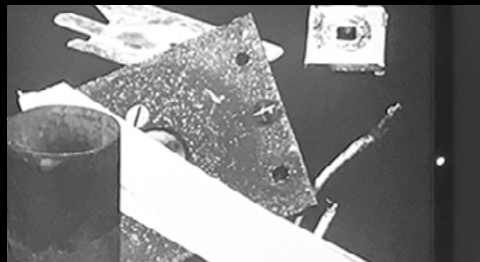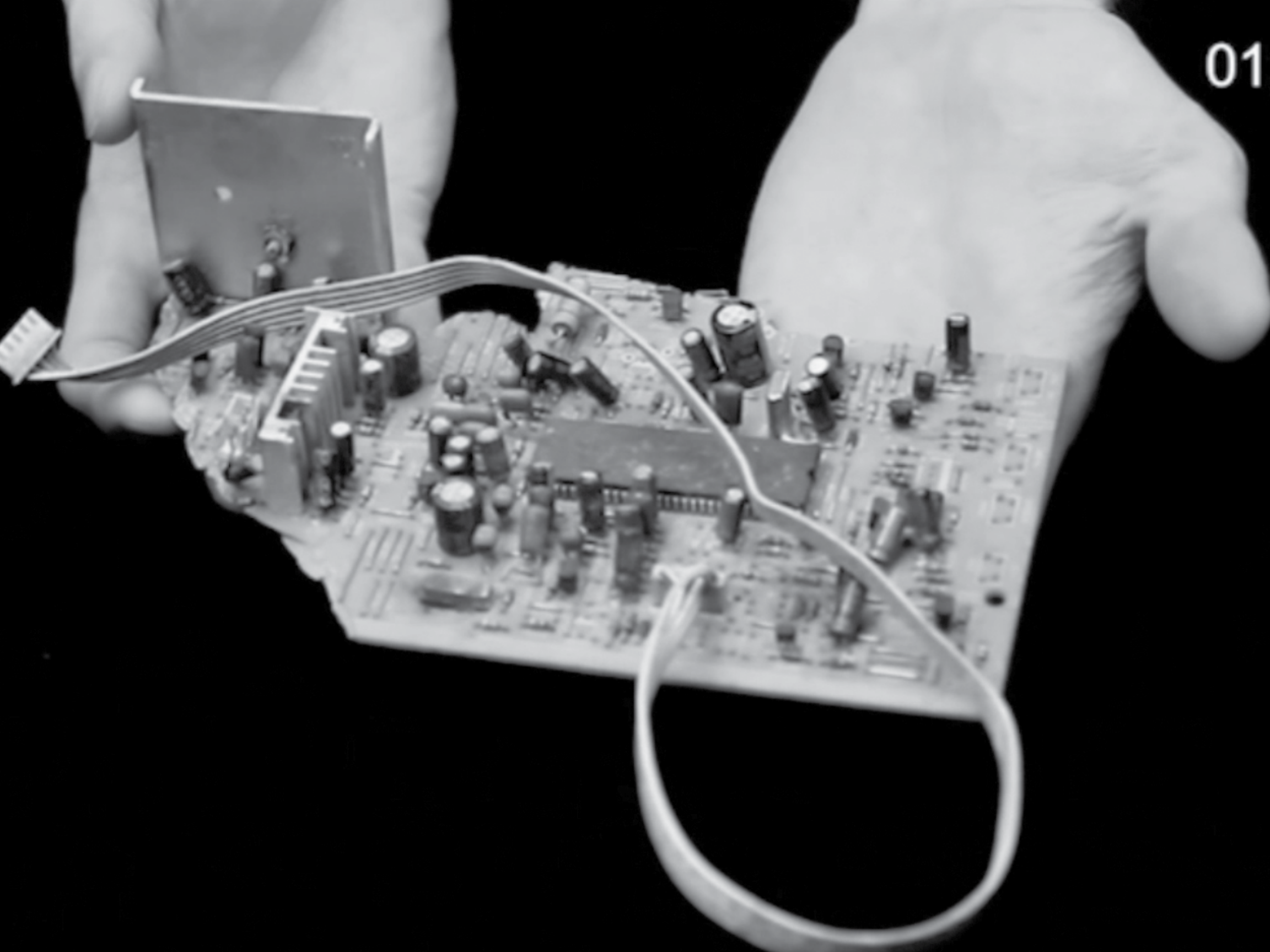
BEFORE

TODAY
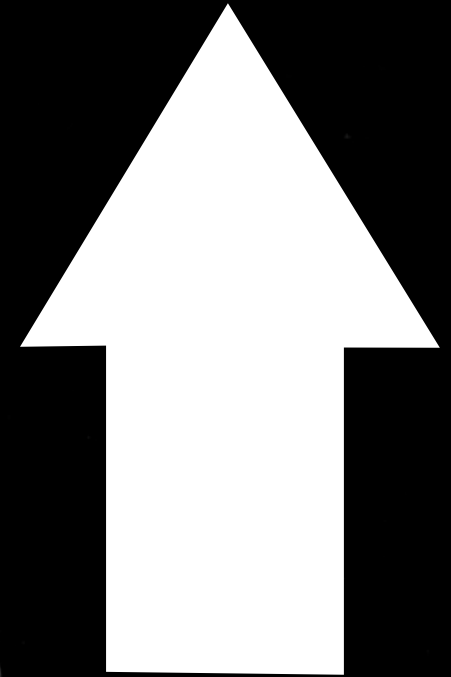
Polygonal Studies *Risograph print* *2017*

11" x 17"

Polygons hold the rendered world together.
They make shapes smoother the smaller they
become—resolution. Like the cellular structures
of organic matter, polygons are the basic structure
or wireframe that gets repeated to create the skin
and shell of a rendered object. These prints live as
cross-section cuts of rendered objects. Similar to
studies found in biological documentation.
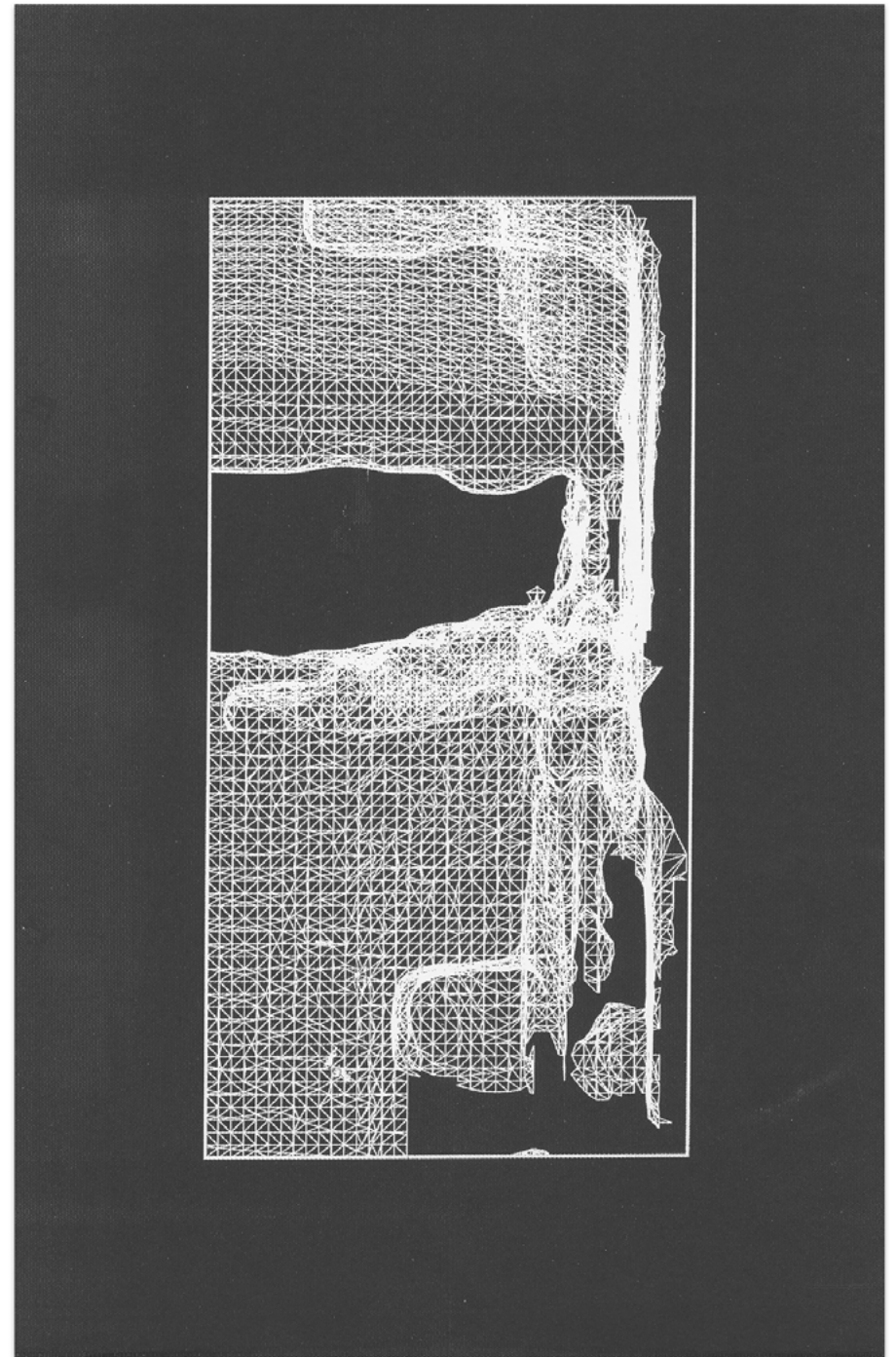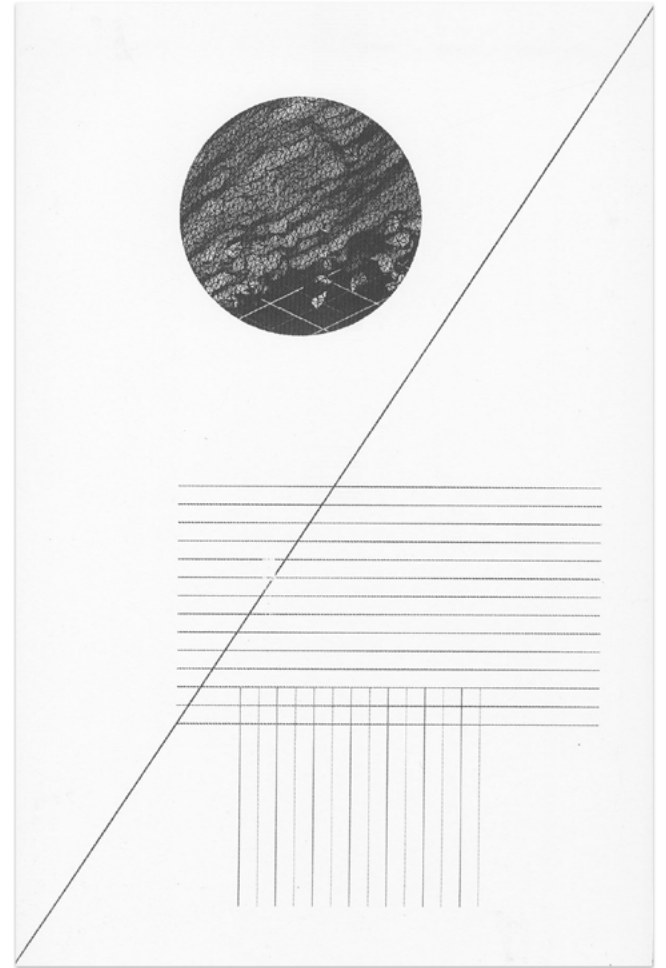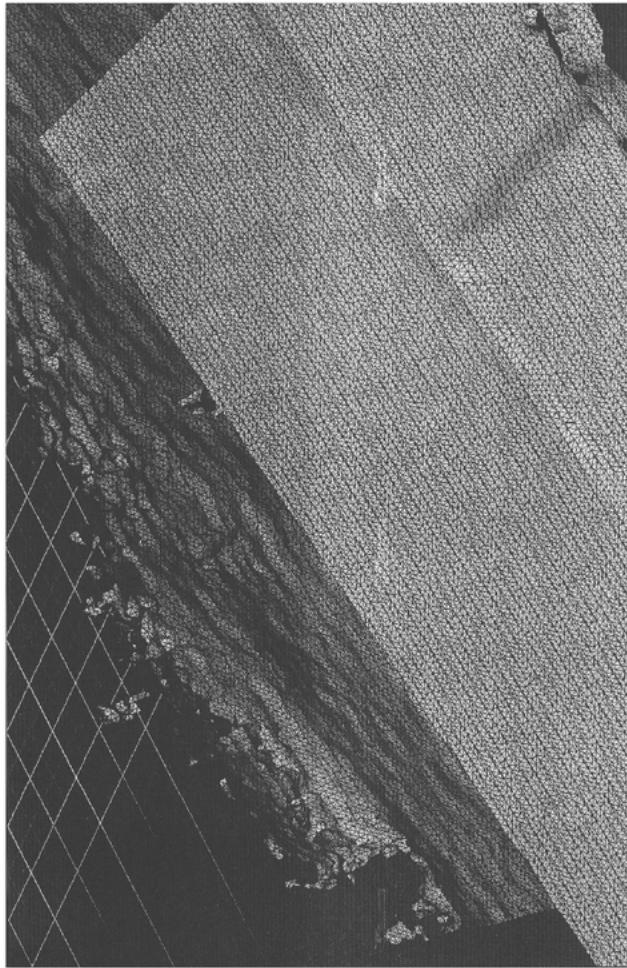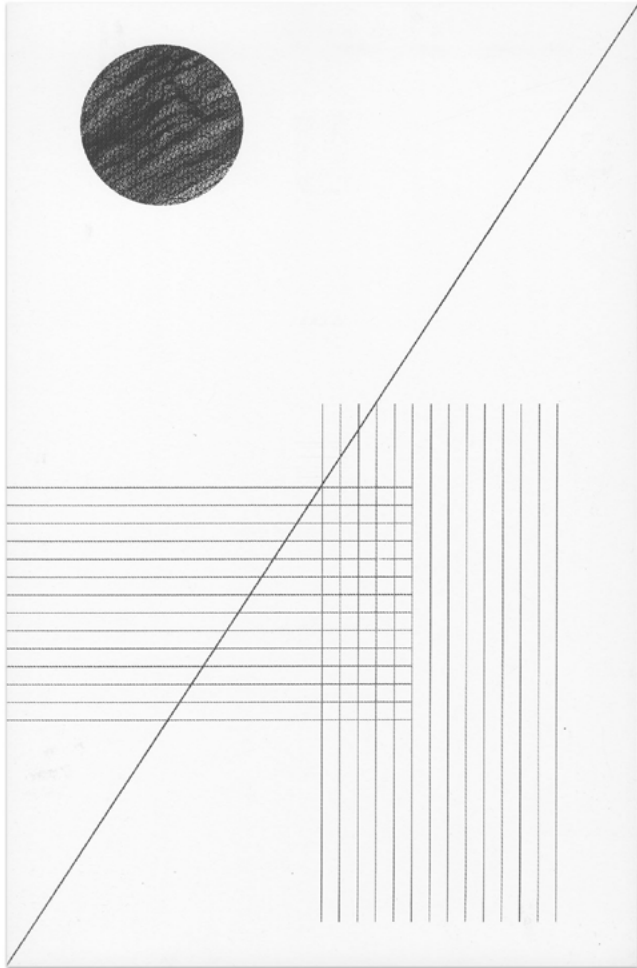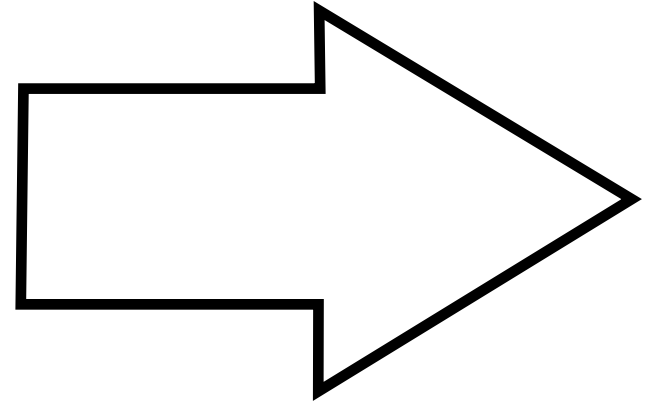
1 234567 890128 >

9 780735 623873

6 10762 56932 7

DR2039

5 012345 678900

5 901234 123457 >

6 000980 911046 >

036000 291452

9 781855 682979

0 075678 164125

0 123456 789104 >

6583 3254

9 788679 912077

5 012345 678900 >

(00) 1 0614141 012345678 6

(00) 0 0123456 000000001 8

1 2 3 4 5 6

5 014016 150821 >

0 705632 085943 >

0 123456 789012

6 92771 01744 0

9 781855 682979

(01)09312345678904

3 65813 21608 7

5 010029 020519 >

1 234567 890128

640509-040147

1 68426 48321 7

780863 185779

1 09062001 02920

0 075678 164125

5 012345 678900 >

9 781855 682979

ISSN 1234-1452

0 1

A3419500A

9 771234 145003

0 123456 789104 >

3 65813 21608 7

5 060204 120848 >

Process

*Perhaps, Techno
Byproduct .01*

*HD video, found ob-
jects, cardboard, vinyl,
plexiglas, 3-D prints,
inkjet print*

2017

Unassumed, unseen, I
lay here with an immaterial
soul
Exacerbated, I
collect beneath the concrete
aggregate
My hollow shell is
evidence of a greater force
The underpinnings,
sealed and stowed
I am now recon-
structed, my surface, con-
sisting of 69,451 polygons
begs
disillusion
I'm empty, but I see
you, as I sink slowing into
the ground
A depth gauge pricks
my layers
True to the virtual
world I was created in, many
creative decisions had to be
taken
I'm here
Once pure, maybe, I
lie at the intersection of a
stabilized wet fraction
Marked and measured,
I inform you of empty value
My collateral damage
is ever produced
I am good, my as-
semblages speak to a new
condition
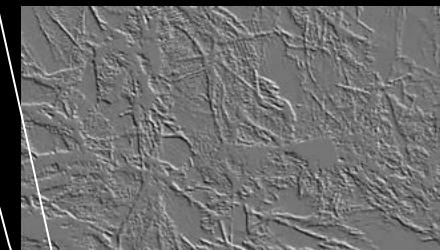Fossils found, in a
liquid morph I saturate
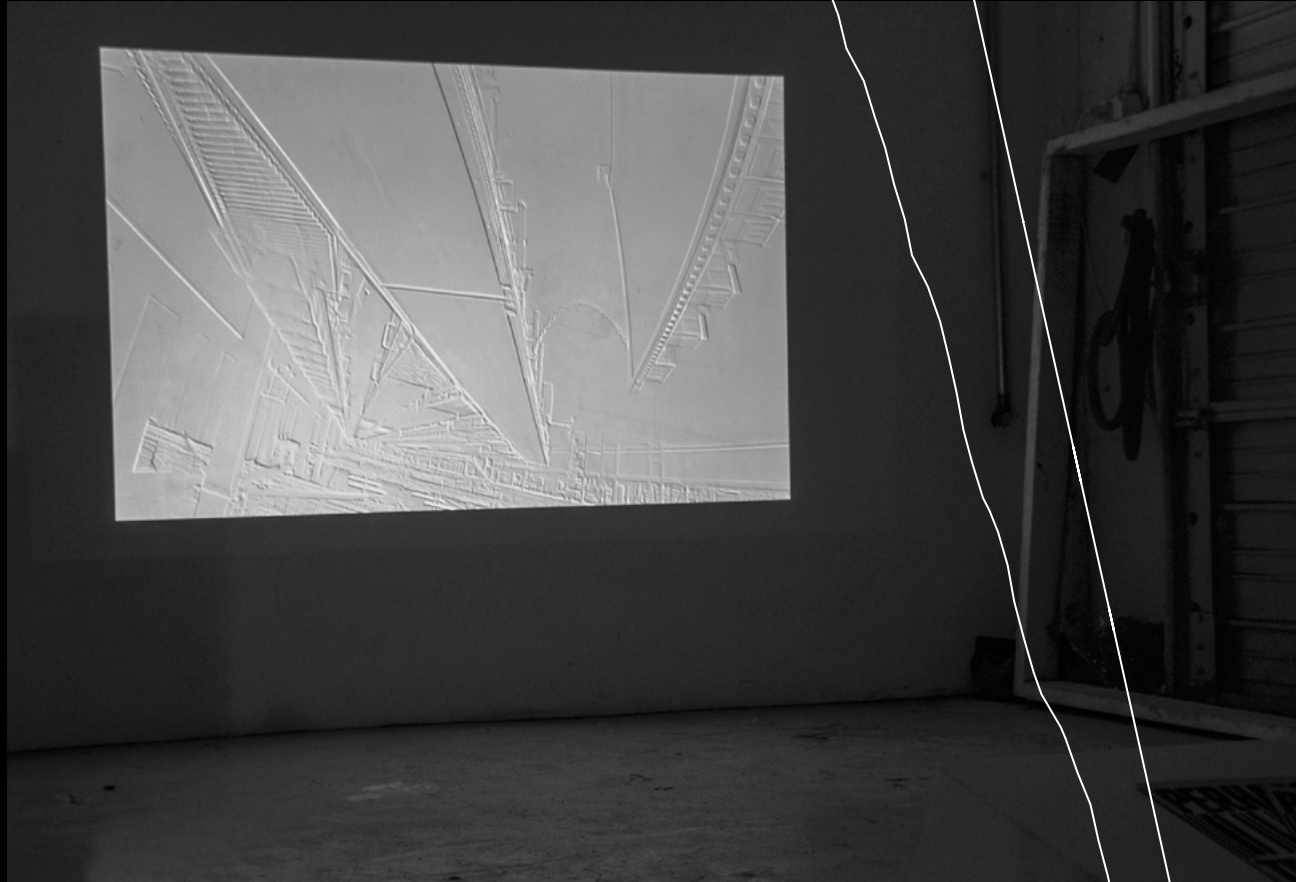Reproducibility and
reconstruction
beckons my
uncertainty
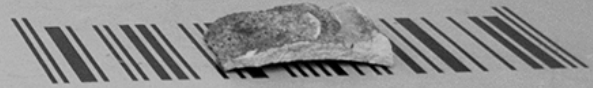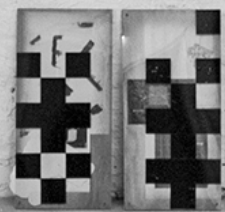My forms are inter-
mediate, brackets
meshed, reminiscent
of
technological
support
Compressed

Layers Removed   *Autonomous 3-D*   *2017*
                                printer, amplified
                                audio, radiant heat,
                                HD video. metal shelf,
                                packing cellophane

Looking at the situation of industrial production and manufacturing today, it is pertinent to ask: are we on the brink of a state of automated industrialization? What does this portend for our future economic and social systems? While we have glimpses of self-sustaining, self-organizing, and self-producing factories in our near future, the removal of the human hand is more comfortably imagined than realized. This conflicting state is one of my investigations.

With new technology, designers have personal capabilities to summon machines to reproduce goods in excess quantities with various ranges in control over production—from coffee mugs to optics to hand tools. Aside from the initial want or need to create something, with new technology we can entirely remove ourselves from the building process. Layers Removed is an installation formed around the strife of autonomy and isolation within new modes of assembly in digital production methods. This installation is a visual package that aims to discuss the obscure relationship we have with digital entities and the pervasive forms taken by such objects today.

French philosopher Gilbert Simondon writes what he perceives as the technical object and its relationship to culture by saying, "culture has become a system of defense against technics. This defense appears as a defense of man based on the assumption that technical objects contain no human reality. We should like to show that culture fails to take into account that there is a human reality in technical reality and that, if it is to fully play its role, culture must come to incorporate technical entities into its body of knowledge and its sense of values." This installation seeks to heighten our awareness of technology through a multisensory experience intending to question our proximity to the layers of automation in new technology.

The question becomes, what are the sustained effects of placement and position of the individual within the process of creation relating to the technical object? What roles do humans occupy when confronted with new forms of industrialized machines? And do we take on a function of the technical individual—a person Simondon describes as one who delegates, supervises, and monitors technology, removed from the inner workings.
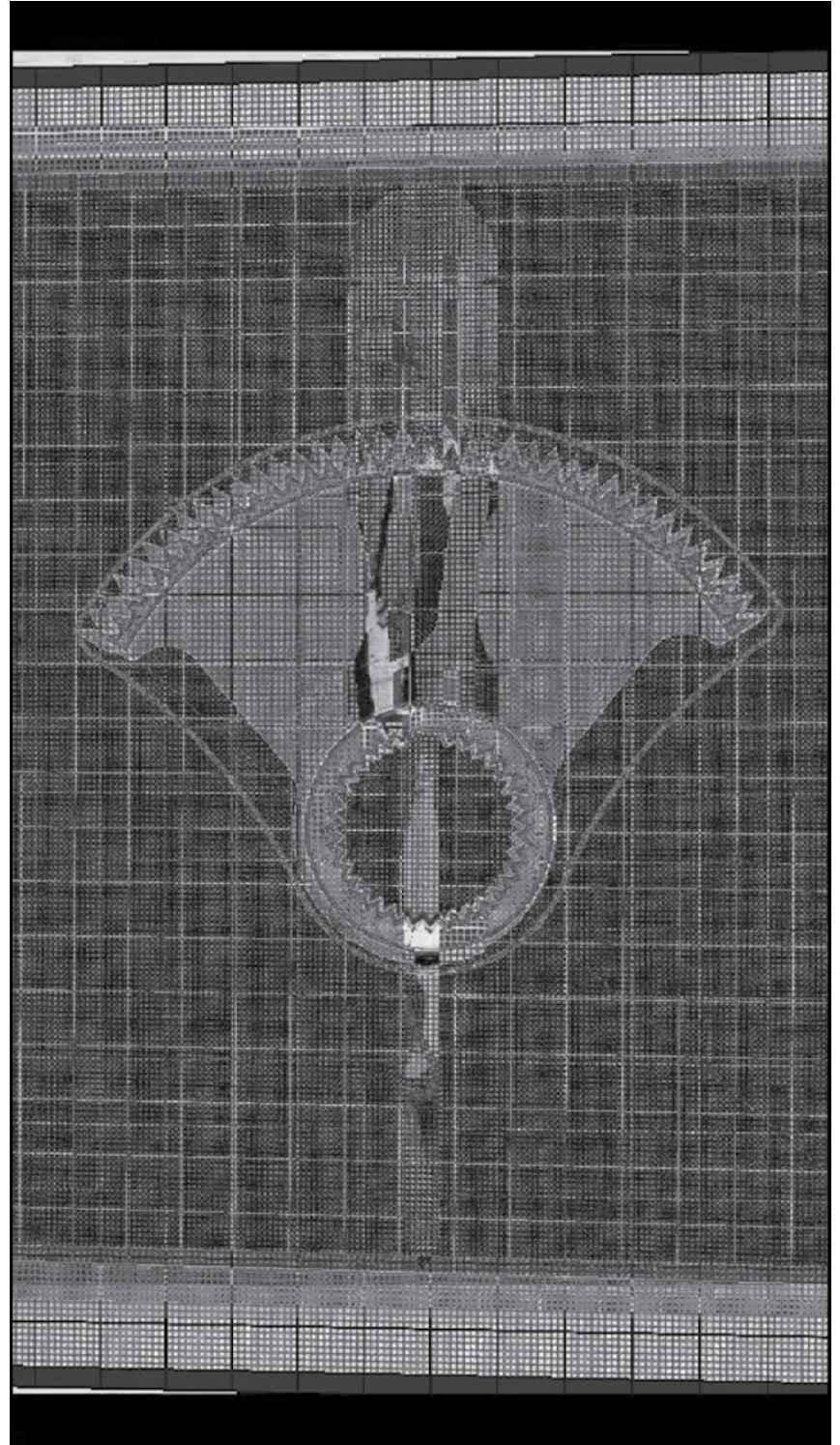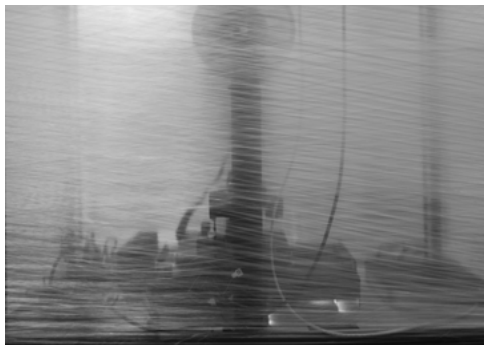
Process

Process

Residual Echoes   *3-D prints, plexiglas,*   *2017*
                          wood, L.E.D lights,
                          digital display, risograph

Fossils are the record of life, situations, and environments preserved in monuments of stone and minerals. Fossils material-ize through a series of processes that extract, shelter, and hold surrounding information that's in its environmental proximity. Through the process of decay a living organism creates a void in its resting spot where lay-ers of fluid silt and sediment can inhabit–creating a shell or vessel for environmental data. Throughout time, theses records of material are compressed and solidified to form markings, notes and traces of the continual space inhabited. It is where geological residue goes to preserve itself. Ammonite, the most prevalent and widespread fossil are spiral shells of specific environmental recordings. The growth of the shell is a logarithmic self-ref-erencing spiral. A compact and efficient structure for growth and information holding.

These digital fossils have grown and petrified through algo-rithmic time. Through a digital method of processes, sound from environments I inhabit on a day-to-day basis is formed and compressed in a multitude of capturing and rendering pro-grams to eventually material-ize a spiral formation in plastic through a process of continual striatic layering. The 3-D object is a representation of an envi-ronment using captured sound. This digital labor is an ongoing investigation with my research on pervasive digital technolo-gies (3-D printer, conversion software, 3-D modeling) that processes data into physical forms. As I continue to define what labor and time mean to me, these material assemblages of memory mark instances where psychological meets computa-tional labor production.
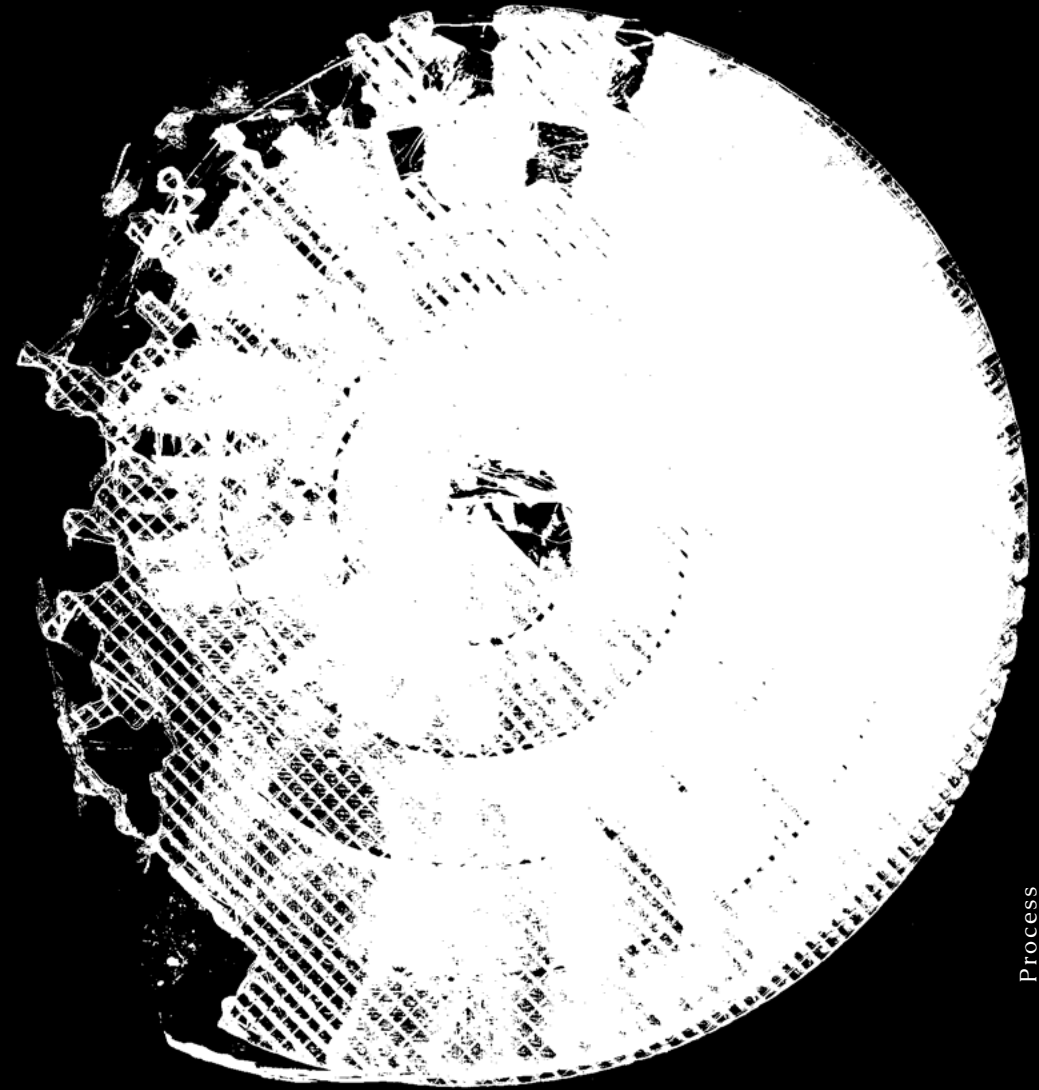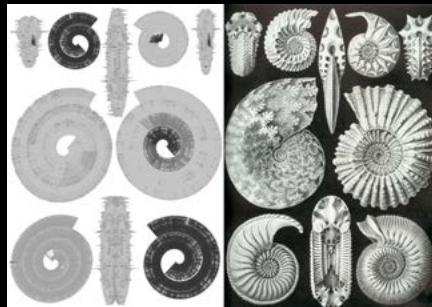
Process

Notes:
     Waiting: delaying action-until a particular time or until something else happens
     Loading: a cargo, weight, or stress placed on something

I was inspired by the in depth process of the *Situationist Times* pub-lication on spirals an labyrinths and some of the short writings in there that discussed traveling through mazes and labyrinths and the burden on the human psyche.

This project began as an investigation into redefining what labor means in relation to working with new digital technologies. That of open source software, algorithms, and 3-D modeling. I started by capturing sound in environments that I inhabit, the studio, my home, library, along with conversations, speeches, lectures and research that was able to be obtained audibly. By capturing these ephemeral memories in different environments I was able to gain another visual and tangible object to recollect memories. Working with a sound sculpture program I was able to create logarithmic spirals that grew from the center which was the initiation of recording and spiraled outward. By working through this process I found similarities to geological processes and their relation to digital systems and how time is structured when working virtually versus perceiving a reality or a moment that has passed.
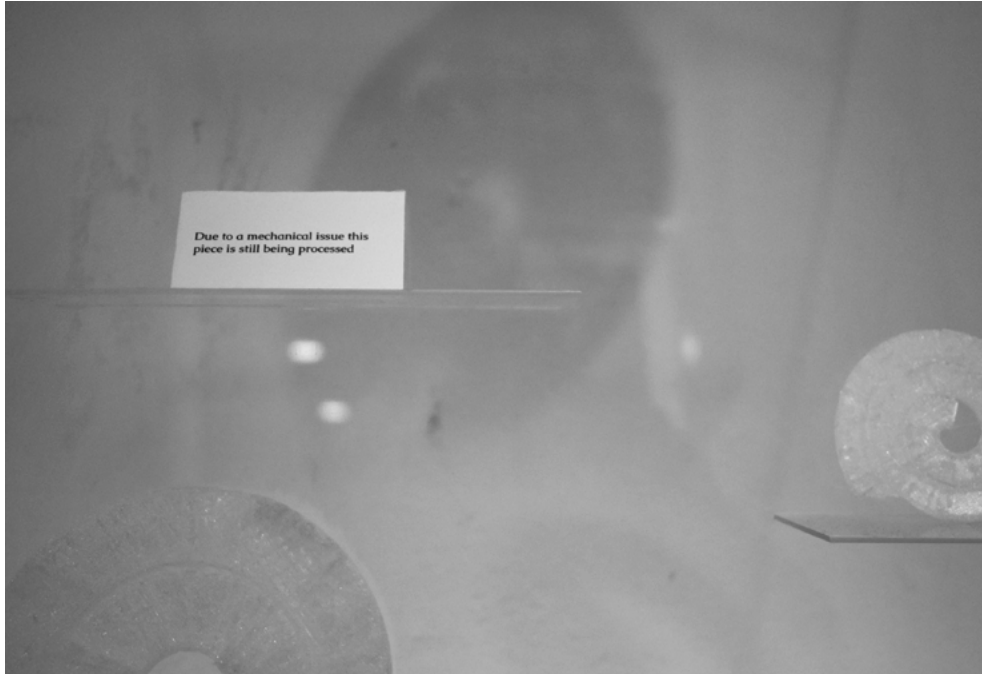
Process

The spiral byproduct of time
Lost in a digital techno-maze
Petrified plastic impressions
Processed through numerical junctures
The residue seeps past the fissure
Assembled, the walls frame alternate echoes
Ghosts in the loop
Retracing, retracing, render
Inscribed is the material memory

Process
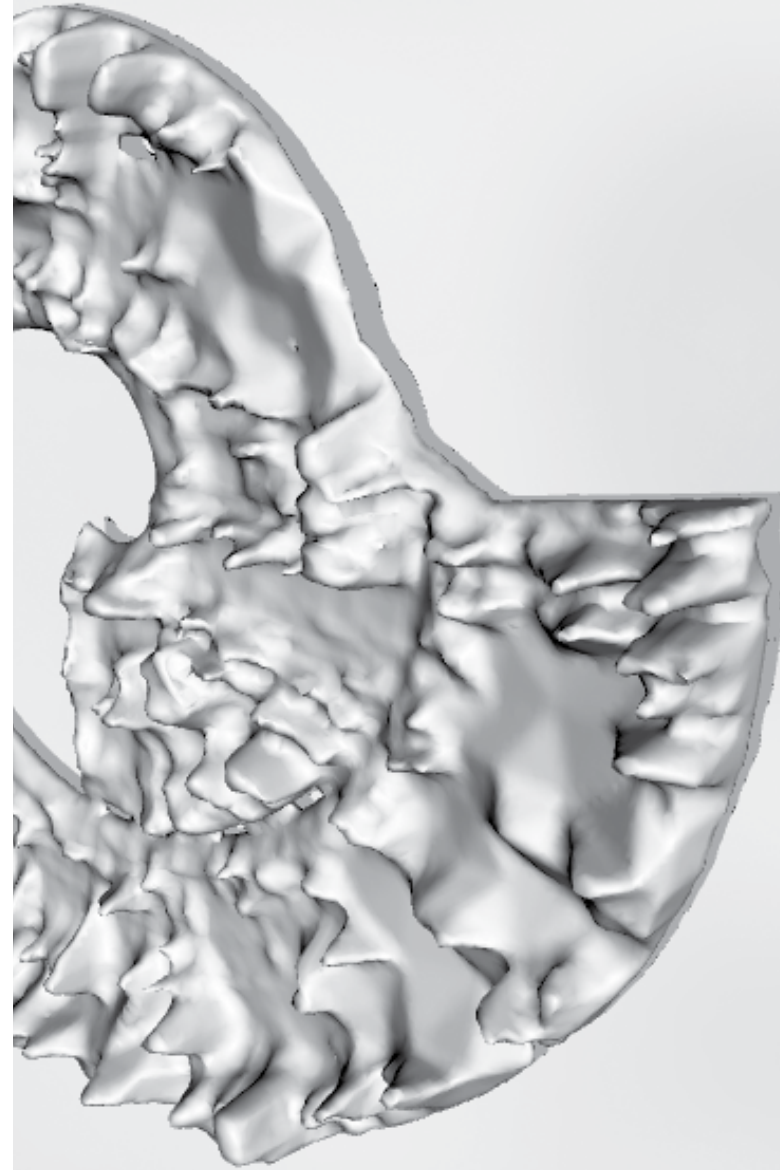
Digital Demons
Risograph, laser print, perfect bound book
2018

Digital Demons: Is Additive Manufacturing a Monument Threat? is a critical essay that spans the history of additive manufacturing and 3-D printing. It looks at landmark examples in the technology from conception to present day discoveries and the politics involved. It questions the rate at which we as a society consume and produce technology and its counterparts, the demons that are latent in such hardware and data. From the Liberator (3-D printed gun) to terrorist making drones on the battle field, Digital Demons questions this new vector in a techno-economical society.
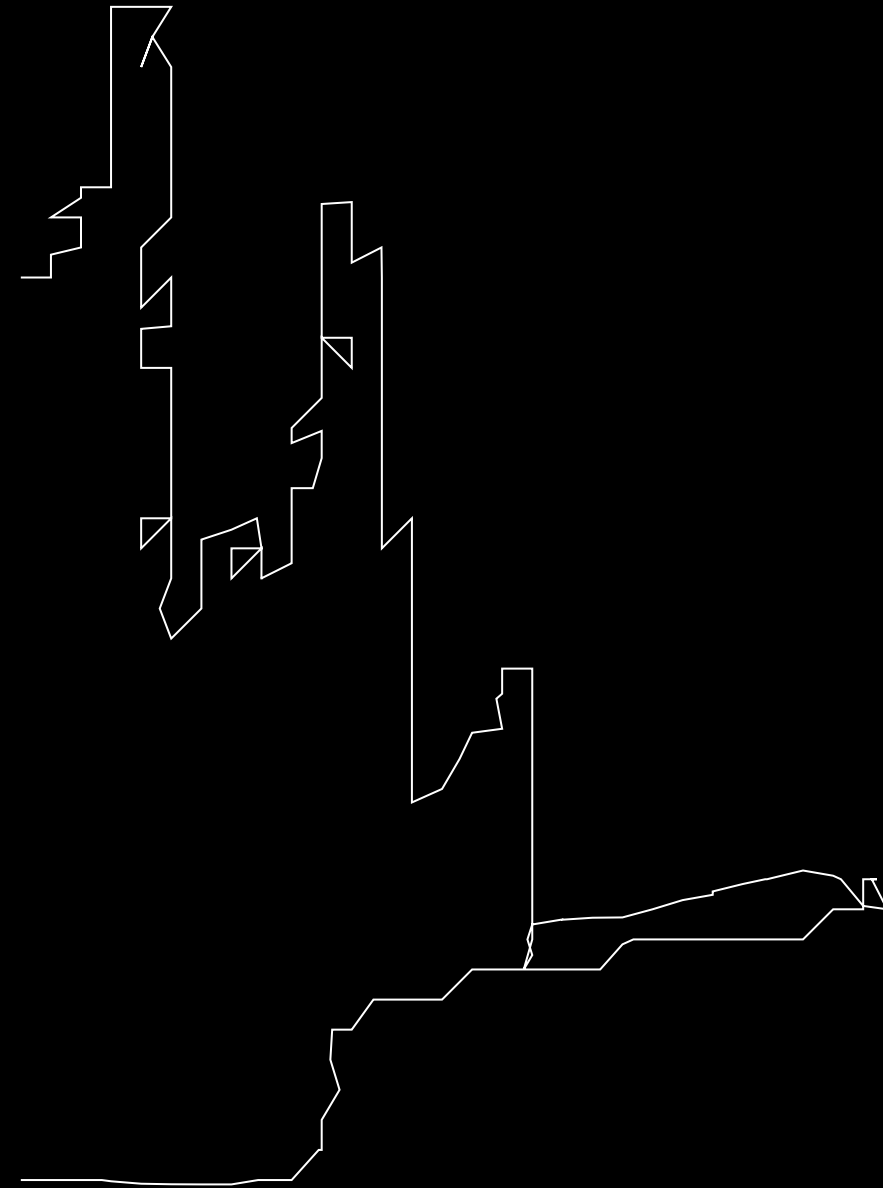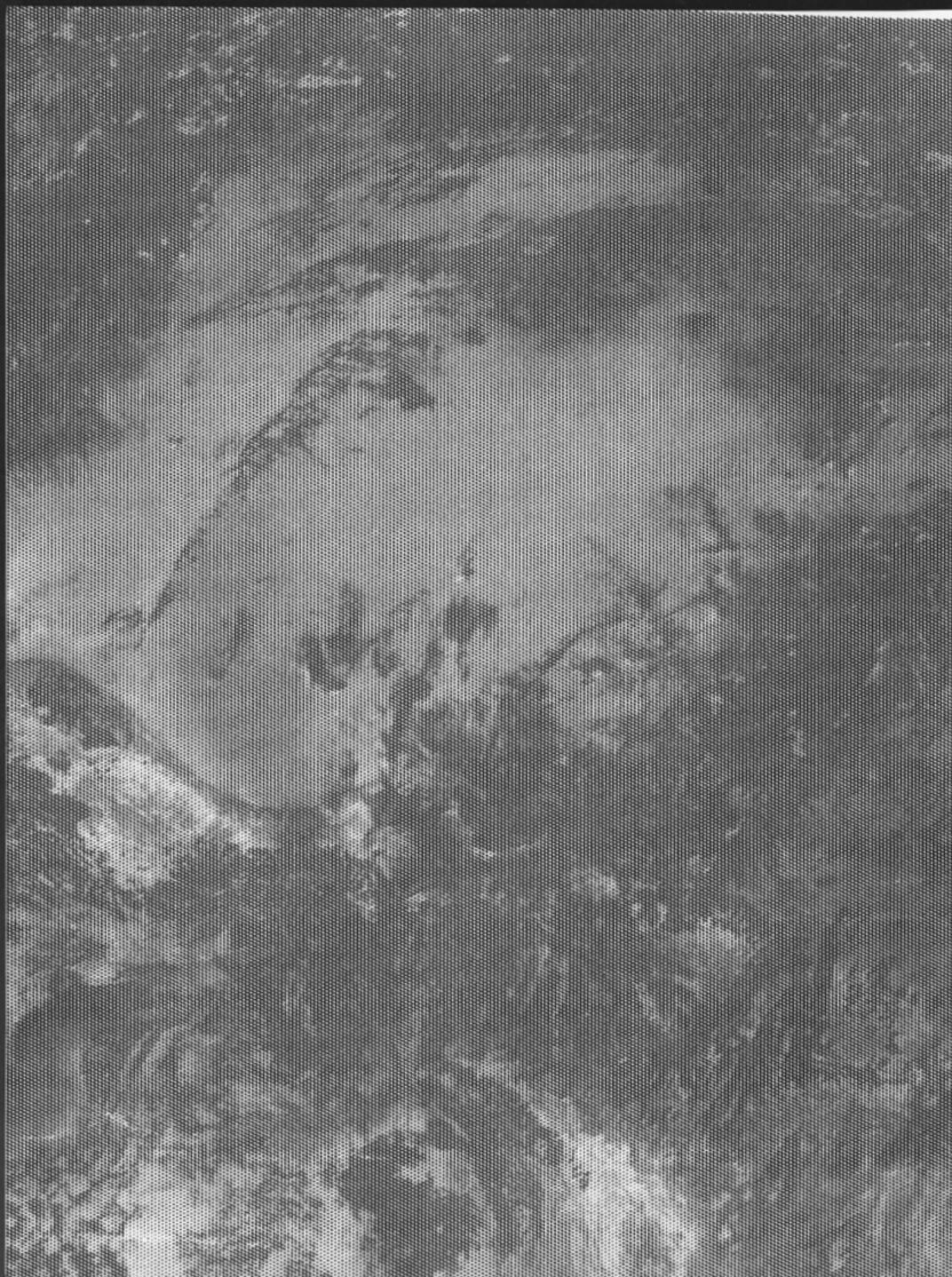
"The revolution is not
additive versus subtractive
manufacturing;
it is the ability to turn
data into things and
things into data"

-Neil Gershenfeld
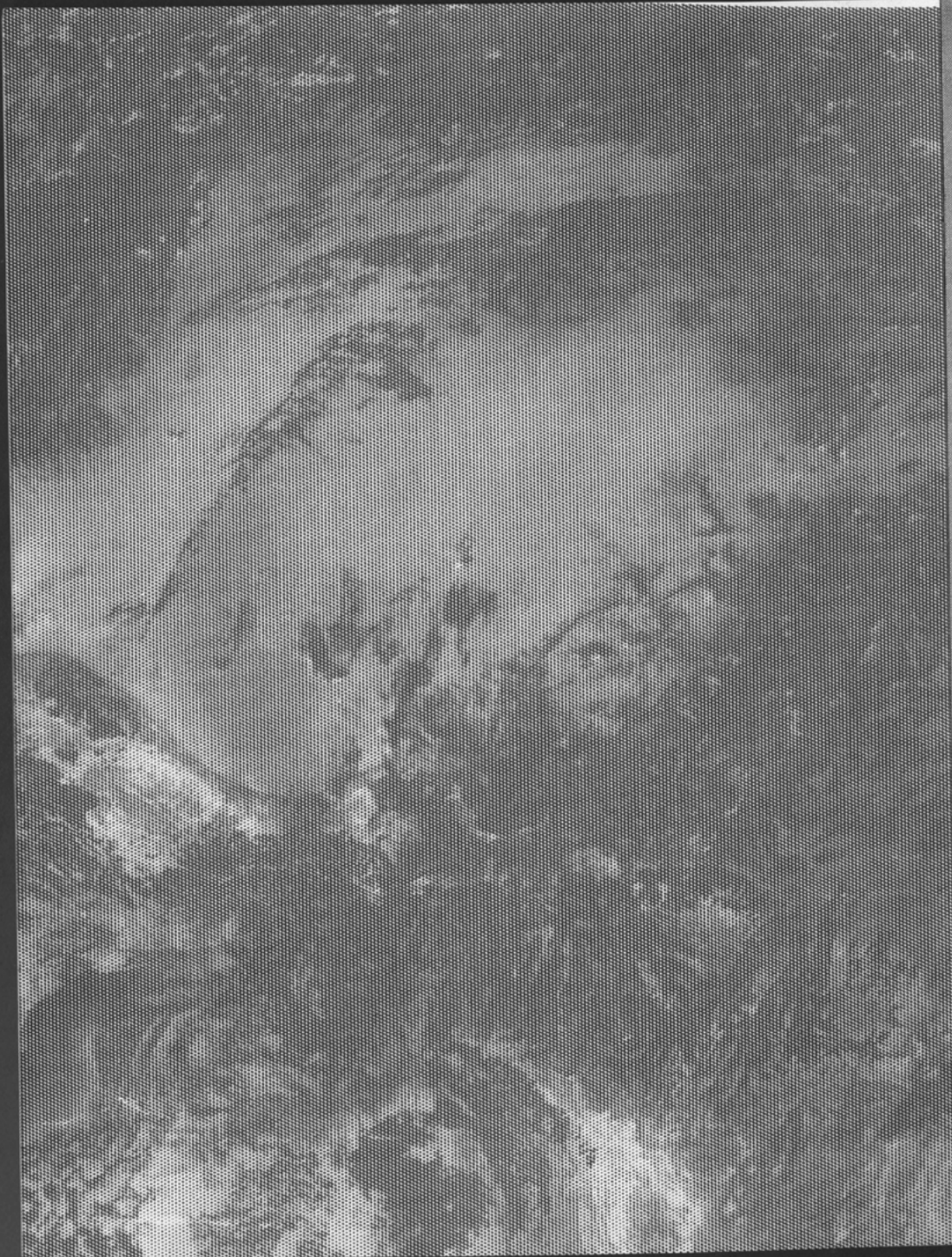
Recently, there has been a lot of talk re-
garding virtual security–malicious attacks
on virtual worlds that have physical world
impacts. It has become common to hear
of malware and ransomware attacks in the
news that shut down companies for days or
weeks, demanding assets before handing
over data and information. An area of less
collective concern is the potential techno-
logical attacks posed by physical objects
that are created digitally.
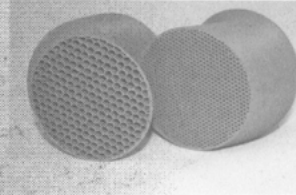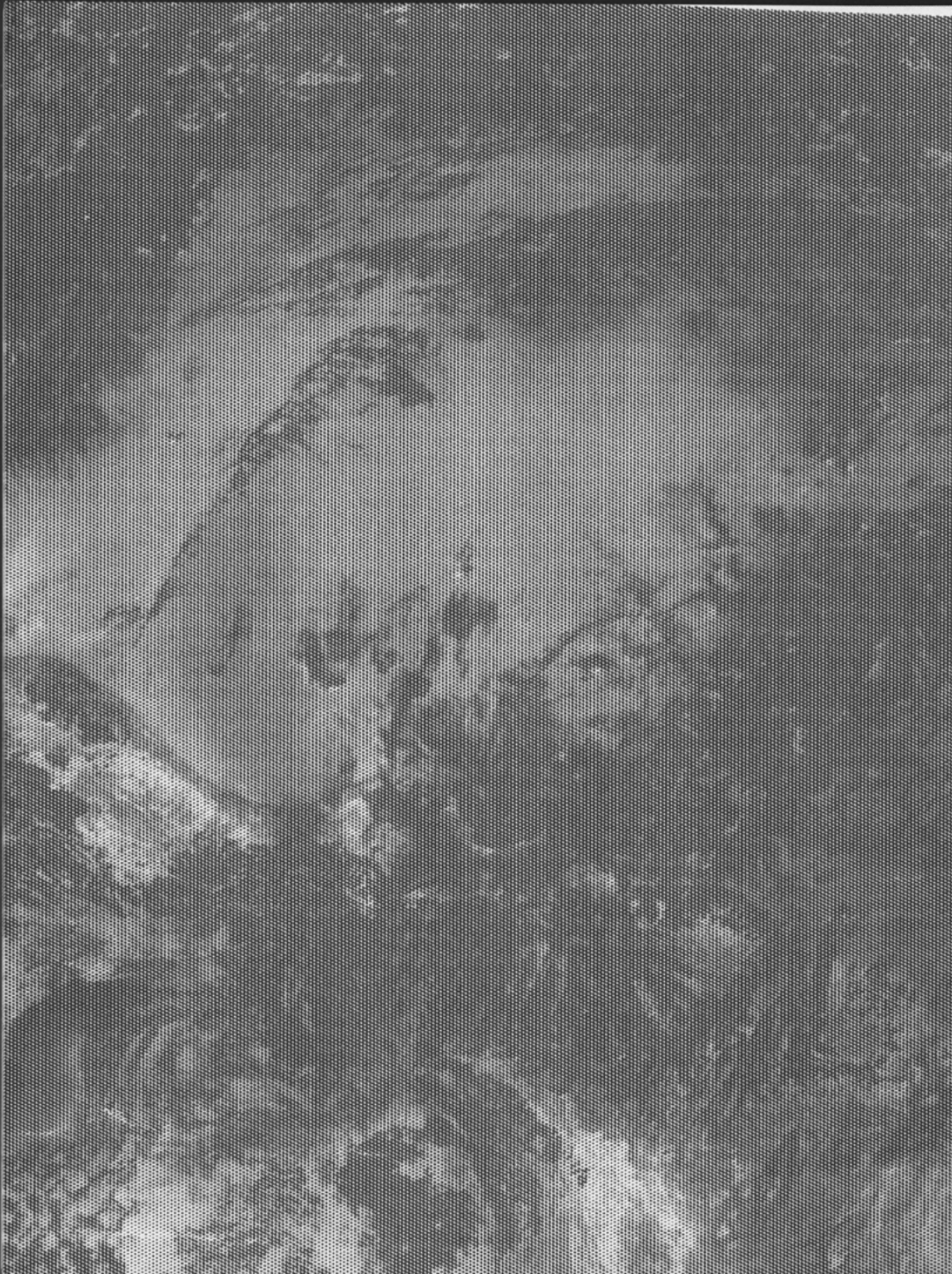
3D printed honeycomb structure, 2016

02

On May 6, 2013 a company from Austin, Texas called Defense Distributed released the digital files for a fully functional hand-gun that could be 3D printed. The file was freely downloadable to anyone with an Internet connection. For just 6.8mb of hard drive space you were able to own the digital components of a fully functioning handgun. This was a turning point that the pioneers of personal 3D printers like MakerBot's Bre Pettis simply never imag-ined. Although it sounds simple a person who downloads this file still needs access
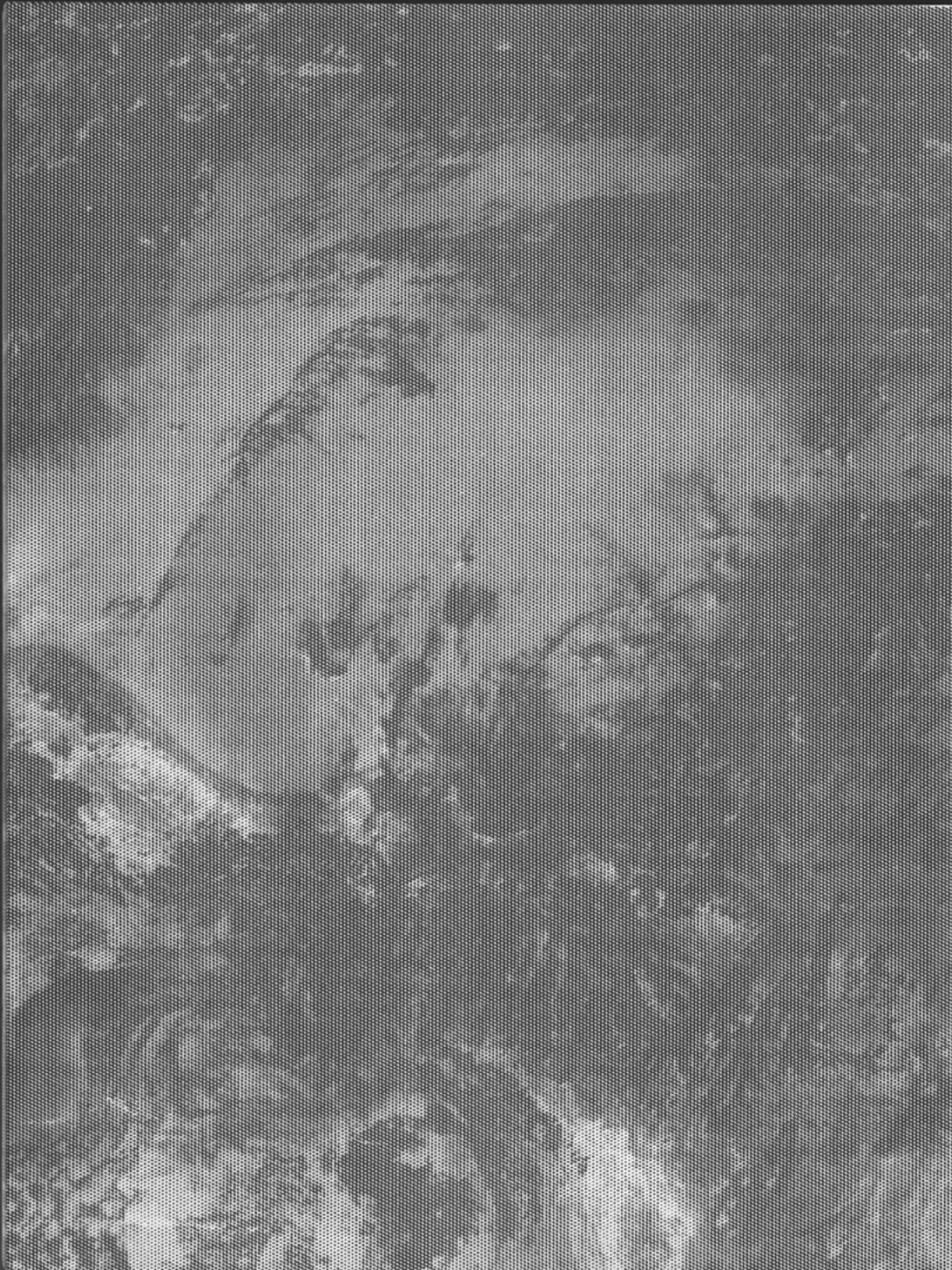
to a fairly expensive machine and ammu-
nition to make this plastic gun a deadly
force. But once word circulated that a fully
printable handgun termed the "Liberator"
was freely downloadable on the internet
thousands downloaded the file. Creating
a scare, the Liberator was ordered to be
taken down by the US Department of State,
but by that time it had been shared, saved
and copied 100k plus times. The files were
taken down from Defense Distributed web-
site, but immediately became available on
torrent sites like The Pirate Bay[3]. Questions
of authenticity quickly arose once people
began to download the gun from third party
sites. It is hard to detect whether a 3D file is
corrupt or has been changed, and without
having a way to compare it to a physical
copy or an original digital file provided by
Defense Distributed, the first release of the
Liberator lost traction as a reputable and
quality fabricatable object. This instance
not only drew fear in the eyes of the public

3. Moreshin Allahyari and Daniel Rourke, The 3D Additivist
Cookbook, 2017, 290-291
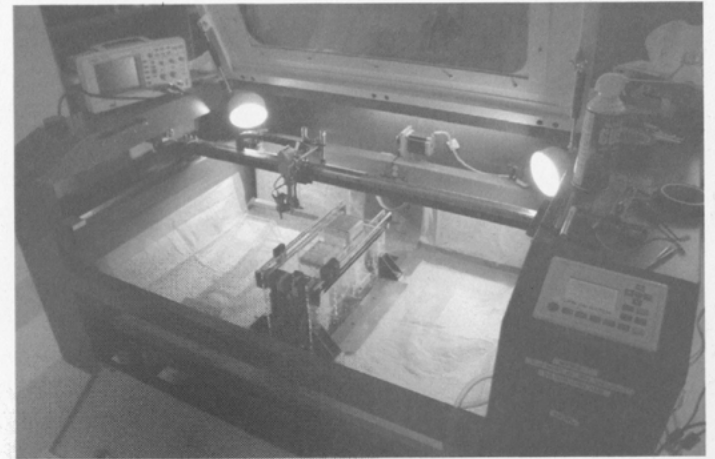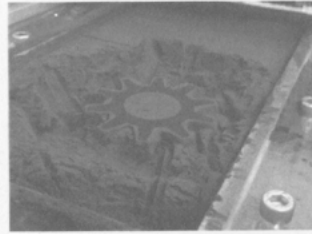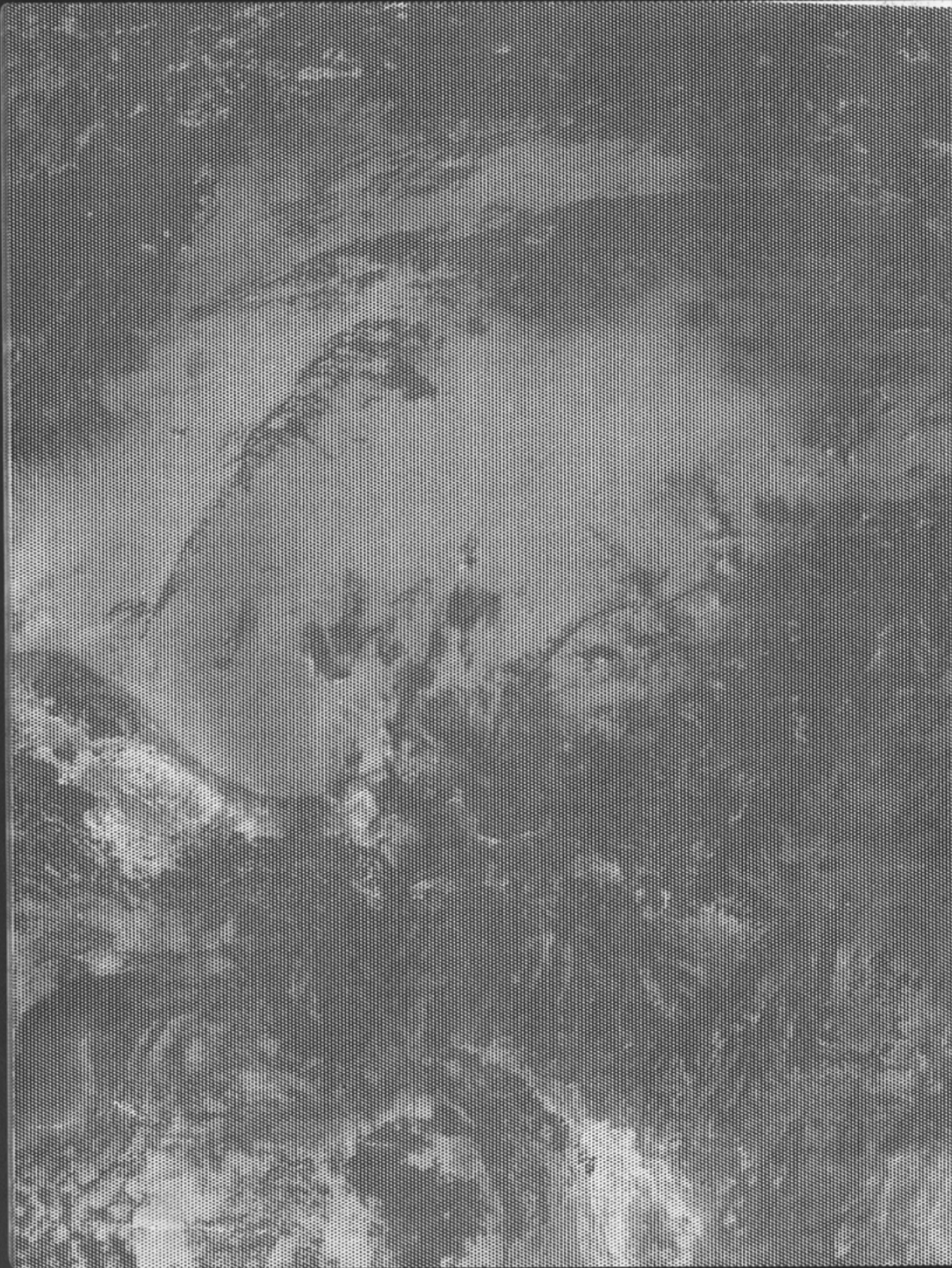
Selective laser sintering printers
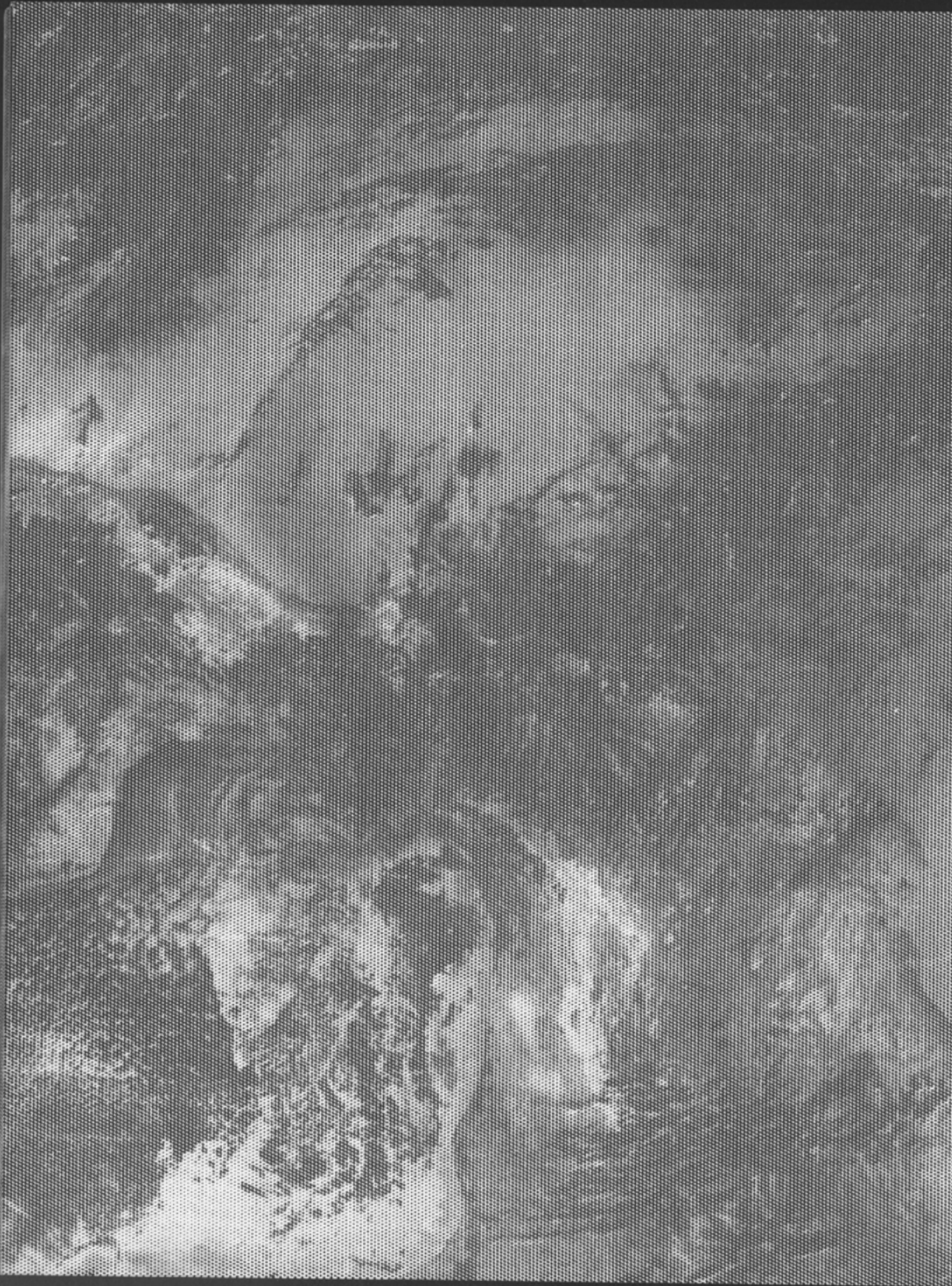
Three-dimensional printing is quickly taking shape in multiple formats, with risks growing ever higher the more diverse and quickly developing printing becomes. There are always two sides of the coin, and the in between. The look into the developing history of additive manufacturing and the potential threats it poses may be a premature conversation, but one that I believe will become a priority within the coming years. Although we don't hear or see about threats being issued via 3D printing, it does not mean they are not being developed right now by selective agencies and at home extremist. The US Department of Defense is prepared to spend 13 billion dollars on technological advancements with one of their primary interest being in additive manufacturing[9]. This alone gives reason to the conversation around possible threats related to additive

9. 2018 U.S. Military Budget Includes Support For 3D Printing"
3D Printing Industry

37

Perhapstechnobuyproduct *2018*

Metal shelves, fabricated lightboxes, 3-D prints, 4-channel generative audio, found objects, digital display

Part pseudo fulfillment warehouse, part expiring storefront, *Perhapstechnobuyproduct* interrogates the aspirational claims of customization and control by sociotechnical industries. This installation is rooted in modern unresolved relationships to new forms of production, capitalist intent, and materiality. The accumulation of 3-D printed objects are now remnants of a culture of hyper-consumption. Derived from petrochemicals, these objects act as markers of fulfillment where instantaneous data can produces uncertain outcomes in uncertain times through continuously developing tools.

I developed this project through-out the winter of 2017–2018 until the exhibition which took place on April 27, 2018. The process took on many changes, but one thing that kept it together was the centralized theme of producing household products through a consumer grade 3-D printer. Forty pounds of plastic later I had somewhere between 700–800 objects of various shapes, sizes, and resoultion.

WARNING: The heated bed and extrusion nozzle ge
temperatures that can cause serious injury when in U
touch the bed or nozzle while the 3D Printer is opera
allow sufficient time to cool down before touching th

I consider this piece part of an extended performance. I situated myself in the position of a person who would rely on the printer to make goods needed for the home. The approach to print multiples of the same object is rooted in the confrontation at the store or online when we are faced with countless options and choices. During the production period of this work I kept thinking about the laborious tasks that are often associated with new technology—waiting for files to load and render—watching a machine. The repetition of the same process became second nature and I found ways to optimize the system. This led me to resize and customize the prints faster, along with speeding up the actual printing process. I kept thinking about how we adapt machines to benefit our needs and desires and how that concept of adapting or customizing technology is used in marketing and advertising to facilitate buying. It's this loop that I decided to play with in other pieces of my thesis work.

Knowing early that I was able to use an alternative gallery space to create an installation I began to think of the work as being a transforming archive, a warehouse of parts, but also act as a storefront. This led me to research and develop signage that began to mix value statements—questioning what this technology (3-D printing) means to us and what its role is in a contemporary consumer society has become.

Alongside creating this installation I kept contemplating audio as a throughway into the work. I wanted to create an immersive experience that would link the signs, shelves, and catalog together.

The audio piece for the installation is a generative work that continuously plays banks of samples from department store music to machine sounds to infomercial and things in between.

The sound is played back through four public address speakers in each corner of the room. The constant shifting of sound between these different contexts of stores and factories creates a unique experience each time the piece is visited.

The intention to use a the specific space in the gallery was to leverage the deterioration and decay that the room already presented. On top of the dilapidated interior the room had three large windows. My previous ideas were to use plastic sheeting to seal light out of the space.

Upon further consideration and discussion it made sense to use the windows to my advantage and create signs that projected out of the space. This created an instance for the language to be read backwards from inside and right-reading from the exterior of the building. Illuminated at night these signs glow green drawing attention from nearby. Inside, the objects on the shelves reflect the pure green light off their shinny low-res surfaces. The signs are always on. Accompanying the continuously running signs is the audio and a computer screen playing back all of the .gcode (code language for 3-D printer) used to create each piece on the shelf. I was thinking about factories and sites of production never sleeping and always running to meet quotas. Handling the installation as a storage site of production was intuitive to the work. A dolly that was used to cart the catalogs over to the space became a sculptural element along with a fence to create a threshold and backdrop in the space. Oddities in the space were leveraged to help the viewer escape the space—light leaks and cracks in the floor to other spaces all became part of the work.
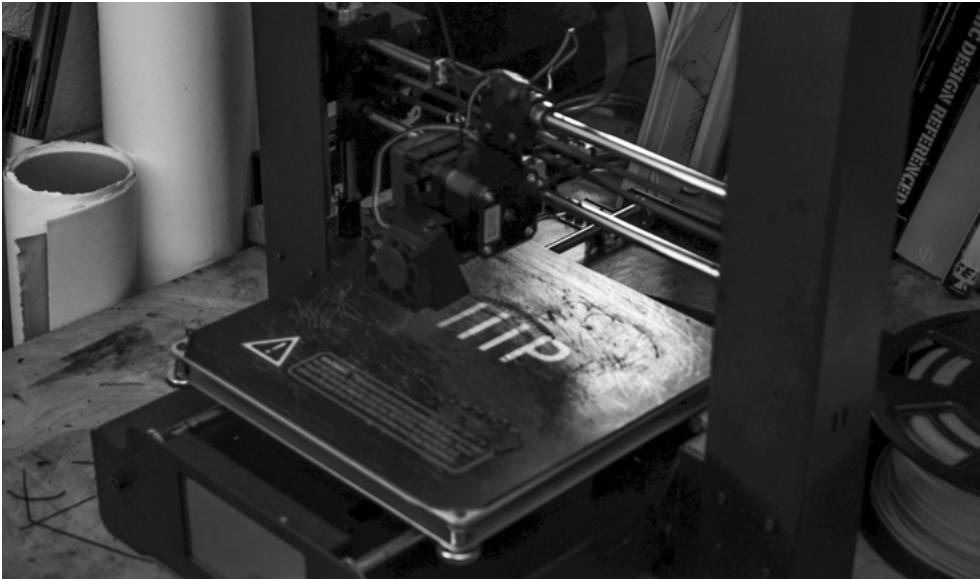
T

Perhapstechnobuyproduct   *2018*

*Metal shelves, fab-
ricated lightboxes,
3-D prints, 4-channel
generative audio, found
objects, digital display*

Considering my work being displayed in
public as a culmination of a master thesis,
I hope that created an experiential instal-
lation about the liminal spaces between
societal roles of the consumer and producer
in the continuously changing capitalist-
driven market. The installation seeks to
present a sociotechnical dilemma—a place
to question how these objects material-
ize and from what origins. My plan was
to evoke a feeling, not only towards sub-
cultures who care to discuss kipple, digital
debris, peer-production, and capitalism
but for wider audiences to enter a space in
between, which they have never felt before.
With tropes taken from dystopian movie
sets, contemporary warehouse settings, and
fleeting traditional advertising I intended
to construct an introspective way of see-
ing a potential new consumer market that
shadows the hyper-consumptive tendencies
observed today regarding domestic objects
and sites of product accumulation.

Perhapstechnobyproduct

Consumer Catalog

IBM PS/1

1. IBM PS/1 COMPUTER, $32 MONTHLY on SearsCharge PLUS,* is so simple to set up, just take it out of the box, plug it in and turn it on. Simple instructions and the PS/1 computer tutorial help you get started. This New system has a 80286 10MHz processor, with 1 MB internal memory. It also includes a 3½-inch 1.44 MB (megabyte) diskette drive with 30 MB hard disk drive, color VGA monitor, with speaker and headphone jack. 2400 BPS internal modem with phone cord and splitter for on-line services like Prodigy. 101-key keyboard, two-button mouse, time-of-day clock, one-button-on switch, and a parallel port for printer. Software includes IBM DOS 4.01, Microsoft® Works 2.0 with word processor, spreadsheet and database programs and more, system tutorial and BASIC software for Users' Club on-line Promenade℠ on-line ... complete encyclo ... lic domain softw ... IGY® interactive ... warranty from IB ... ered for store p ... Alaska or Puerto Ric ...
3 E 32243—Wt. 38 lbs........

SAVE $140. $28 MONTHLY on ... PLUS,* This model is the same as ... with 512K memory and without hard disk ... Was $1429.99.†
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Save 25% on PS/1 accessories below

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3 E 32247—Wt. 22 lbs............. **$429.99**

Black ribbon for PS/1 printer.
3 E 20918—Wt. 0.31 lb **$7.99**

†Was prices from our 1991 Fall Big Book.

Our manufacturers may temporarily lower costs on some of our computer products. We would like to pass any savings on to you, so call **1-800-366-3000** for our current prices

A and B. PRODIGY® SERVICE opens a new world on your computer for a low flat monthly fee. The travel guide has airline schedules and prices. Shop at home with the personal shopper. Entertainment guide has mini-reviews of over 25,000 films. Keep track of stocks and get the news and weather. Teaching games for children. Send/receive messages with the mailbox service. For up to 6 family members. Use with IBM PC, XT, AT, PS/2, PS/1, compatible computers with minimum 512K memory and DOS 2.0 or higher, VGA/MCGA/EGA/CGA capability, at least one disk drive and 1200 or 2400 BPS Hayes or compatible modem. For both 5¼ and 3½-inch disk drives.

A. Start-up kit with 2400 baud external Hayes Personal Modem.
3 F 32568—Wt. 3 lbs. **$159.99**

B. Start-up kit without modem. Wt. 2 lbs.
3 F 32566 .... **$39.99**

A

B

PS/1 Printer
SAVE $20

2

---

1. COBRA INTENNA® CORDLESS TRIM STYLE PHONE. This cordless has a built-in handset antenna so there is nothing to extend, bend or break. Clear Call® circuitry provides sharp sound quality of a corded phone. It also features last number redial and flash to optional access services. There's no need to push the talk/standby button because this phone has an automatic standby. Just take the handset out of the cradle and use; then replace it to the cradle when finished. Warranted.** See Note on the facing page.
3 E 35538—Ivory   3 E 35537—Blue
3 E 35536—Black
Wt. 3 lbs. .... Each **$77.99**

2. SOUTHWESTERN BELL FF650 MARK II CORDLESS gives you more freedom with an incredible 1000 foot range; up to 8 football fields end-to-end. DigiClear Plus® circuitry for superior audio performance. Phone features auto redial, mute button, hi/lo volume control, clear button for misdialing and low battery LED indicator. Digitally coded security feature protects your privacy. Uses built-in Ni-Cad battery, included. Not hearing aid compatible. Warranted.** See Note on the facing page.
3 E 34944—Wt. 3.40 lbs. **$79.99**

3. $10 MONTHLY.* SONY SPP-120 CORD-LESS TELEPHONE has a stand-alone handset design and features multi-channel access scanning of 10 channels. That coupled with the noise reduction system helps provide you with a signal that's clear and static-free. Extended 7-day battery standby power and dual rechargeable battery packs in the handset. 2-way paging between handset and base. Last number redial, 3-number one-touch memory dialing and 10 number speed dialing are also featured. Security code system with 1 million combinations. Warranted.** See Note on the facing page.
3 E 34979—Wt. 3.31 lbs. **$174.99**

4. SAVE $5. GE 2-9515 CORDLESS PHONE has Crystal Clear℠ circuitry that reduces static and extends your clear voice range. Move about freely because the phone will warn you when you are out of range. Phone has 10 number memory speed dial, last number redial, and a low battery indicator. Digital security system prevents false rings from other cordless phones. 2 channel switching to aid in clear reception. Recharging cradle and a portable phone cradle. Warranted.** See Note on facing page. Was $99.99 in our 1991 Fall Big Book.
3 E 34918—Wt. 3.81 lbs. **$94.99**

5. SAVE $5. BELL SOUTH 689 CORDLESS PHONE has 10 channel auto scan to always give you the clearest channel. Compander "Filtered Sound" circuitry reduces static and improves clear speaking range. 10 number memory speed dial with last number redial. Battery low indicator and tone pager from base to handset. Returns automatically to standby mode. Recharges while upright or level. Break resistant rubber antenna. User replaceable Ni-Cad battery and antenna. Warranted.** See Note on facing pg. Was $99.99 in our 1991 Fall Big Book.
3 E 34913—Wt. 2.63 lbs. **$94.99**

6. SAVE $5. PANASONIC 3720 is a 10 channel cordless phone with remote channel selection for the clearest signal. Auto intercom and 2-way paging lets you talk or send a tone from the base to the handset. Comes with a flexible short antenna. Volume control lets you adjust the volume to a comfortable level. Auto security system. Auto talk/ stand by switching. 10-station speed dialer. Sound Charger℠ filters static out of the sound. Convenient one touch redial. Ni-Cad battery, (included) long life standby battery system. Warranted.** See Note on facing page. Was $99.99 in our 1991 Fall Big Book.
3 E 34912—Wt. 2.38 lbs. **$94.99**

689

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#ifndef CONFIGURATION_H
#define CONFIGURATION_H
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#ifndef CONFIGURATION_H
#define CONFIGURATION_H
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SUPER VALUE!
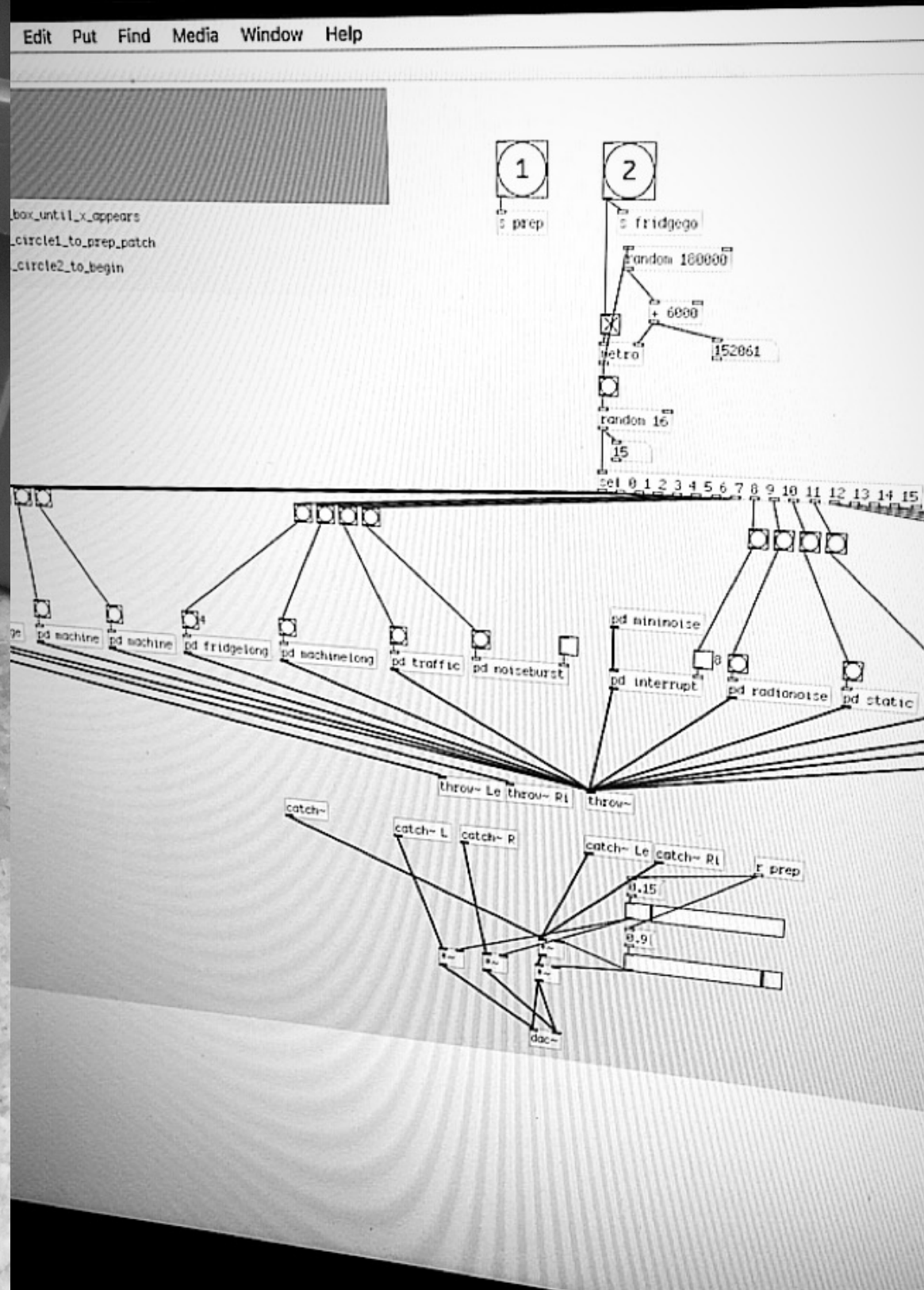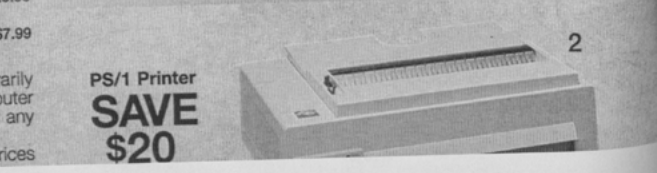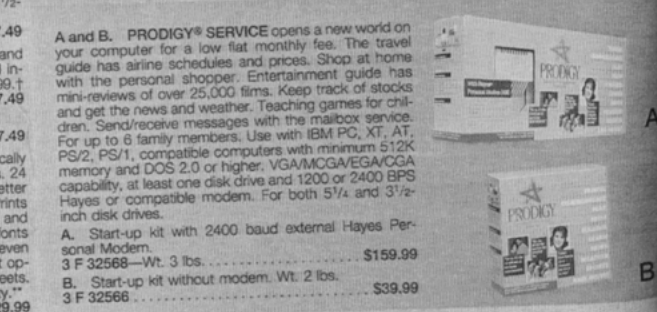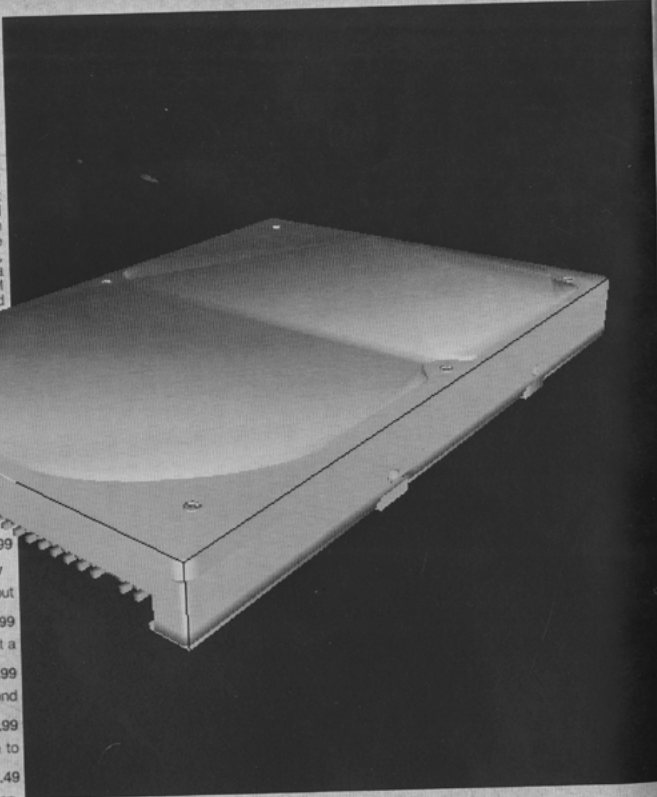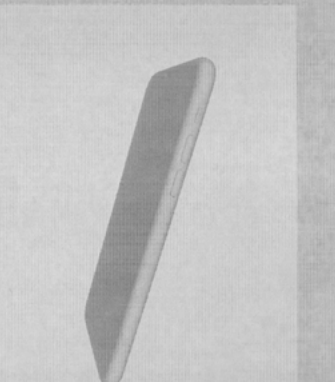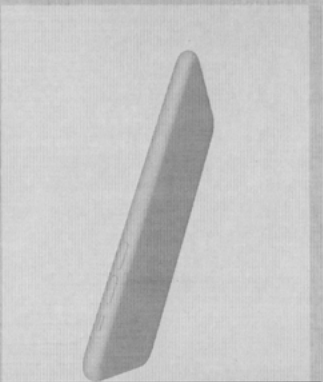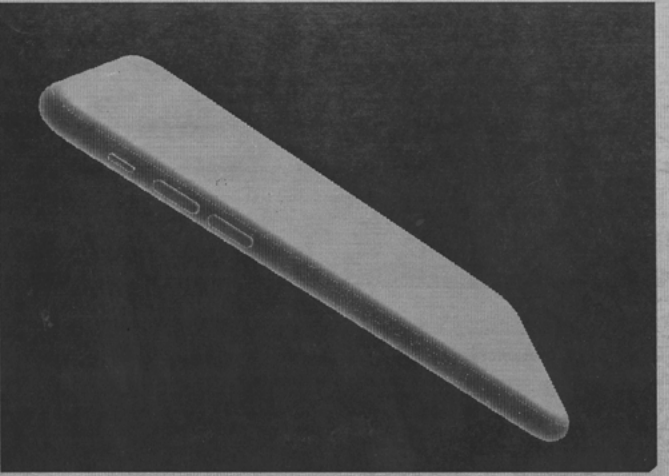OUR LOWEST PRICE

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  1  ;FLAVOR:Marlin
  2  ;TIME:20705
  3  ;Filament used: 38.2944m
  4  ;Layer height: 0.4
  5  ;Generated with Cura_SteamEngine 3.1.0
  6  M190 S60
  7  M104 S205
  8  M109 S205
  9  M82 ; absolute extrusion mode
 10  G21 ;metric values
 11  G90 ;absolute positioning
 12  M82 ;set extruder to absolute mode
 13  M107 ;start with the fan off
 14  G28 X0 Y0 ;move X/Y to min endstops
 15  G28 Z0 ;move Z to min endstops
 16  G1 Z15.0 F225 ;move the platform down 15mm
 17  G92 E0 ;zero the extruded length
 18  G1 F140 E30 ;extrude 3mm of feed stock
 19  G1 X20 Y0 F140 E30
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Closing

Throughout the process of developing a thesis interest and creating an installation, I was posed with certain questions along the way. Some of these were reoccurring, while some were brand new based on recent developments of content. While I hope the installation begins to hint at some of these questions I will attempt to reflect on the following questions posed to me:

"In relation to your work, can you explain the process of materializing and dematerializing?"

"What is your role as creator of the exhibition?"

Why are these objects being created through 'on-demand' technology and then placed to sit and not be activated?
"How do the objects on the shelf intend to perform?"

"You have addressed these as "failed objects" can you explain what you mean by failure?"

"In your discussion about the worker and the warehouse can you talk about where bodies and people come into your work?"

The Plasticene is about our current time in the plastic and information age. My work has touched on the difference between digital interfaces and the bodies that interact with them. The space that I have created in my installation works to highlight the disconnect between contemporary consumer and producer when it comes to mass-made products and new digital objects. In my work, I am not trying to compare old Fordist models of labor and production to new autonomous labor models, but simply understand the continuum of the Neo-capitalist structure we live in today. By displaying an array of plastic objects on the shelves, they not only become a marker of a specific time and place of production—each one is similar, yet different. The plastic products also gesture towards technology's way of reevaluating form and material—resolution being a metaphor for the transitional space this 'debris' falls into. It is not highly refined, but not entirely crude.

Whether this work is viewed as entirely object-oriented or not, the 'worker' that is described in my discussion plays an important part. These objects are highly considered by their creator. They act as mediators between communities of makers, between consumer and producer. Display, organization, and disorganization are all attributes of the hand. Through meticulously setting up the domestic objects on the shelves, I hope the role of the worker is signaled. To credit the instance of download and production I have given attributions to the makers by installing the creative commons legal information within a printed piece of the exhibition.

For my continuing design and art practice, I

Closing

Notes:
FROM DISCUSSIONS....?

Dematerializing vs. materializing
-patina

Emptiness, constant

Irony- aren't meant to be stored and shelved configuration of a workshop

3-D promise optimistic–dystopian
-irony self interest-
As black plastic how do they exist in the world–they are rearrangements of consumer goods
-playing as a performer of that optimism where new technology and material are meant to democratize goods for society.

Thingiverse and irony- they aren't meant to be utilitarian objects—true, but it can be argued that there is a capitalist intent to make a product—just on a different level and within different communities

Where does the digital play into the warehouse. Answer: Catalog—the debris becomes visible not only in the pieces but in the language, and visual overtaking of the catalog.

Who am I in the pieces? Sound piece am I producing or consuming?
-I am the curator of content but relinquish control to the algorithm

Objects: I play a role as consumer of digital data but then produce physical object.

Understanding market strategies, algorithms, etc.

3d print is a metaphor and the data has the higher res to the object compared to the low res output. Where do I position materiality–at any moment the 'material' I'm taking about is both code and physical object.

Immaterial becoming more natural–digital objects becoming accepted as nature.

Intellectual property–becoming more valuable than the physical piece or to be physical   -information age where digital property becomes the selling point.

Failure is not good or bad. Failure is a step towards expanding information

The effectiveness of the show to reveal other sides (accumulation, kipple, etc)

There is no design solution for topics this large. Only ways of showing a personal view and speculation of the other side

Marketing and advertising will always be presented in a clean-cut manner. Driving consumption and desire for 'the new'

While never knowing the audiences intention when receiving the work, certain design markers and curation moves within the work like imperfect

will attempt to deconstruct the models I have previously commented on. From assembly-line to commons-based peer production, where the contemporary rhetoric advocates for a new revolution in consumerism. Using a consumer-grade 3-D printer was my touching point on the shifting of production from large manufacturing to personalized making. I hope that the experiences of viewing my work will continue to push new ways of discussing the pervasiveness of plastic, our relationship to hyper-consumptive ways of living, invisible labor systems, and the corporate intentions driving commerce today. I plan to continue making installation work in context of graphic design where I can build new worlds and new experiences rather than try to aim for new solutions. Designing for solutions is a temporary patch for growing issues. Instead of adding to the conventional pile of graphic design surface treatments, my practice will aim to investigate through and below the surface of ongoing concerns regarding the Plasticene–designing for resolution* rather than solution.

Plastic, new forms of manufacturing, and digital objects are entering in and out of our everyday lives and the spaces we occupy. Will the dreamy realities of 3-D printings utopian vision come true where one day we will be manufacturing all the necessary things we need in our lives? Is this claim just another statement in the continuum of new technological developments? I do not have the answers to these questions, but maybe framing our current time as the Plasticene can lead us to investigate these issues.

surfaces, controlled lighting, reversed texts, and a concern for how people will move in the space all become part of the design experience that imply certain conceptual hints towards my overall goal.

End with some questions–discuss "cene"

Reflection/Evaluation
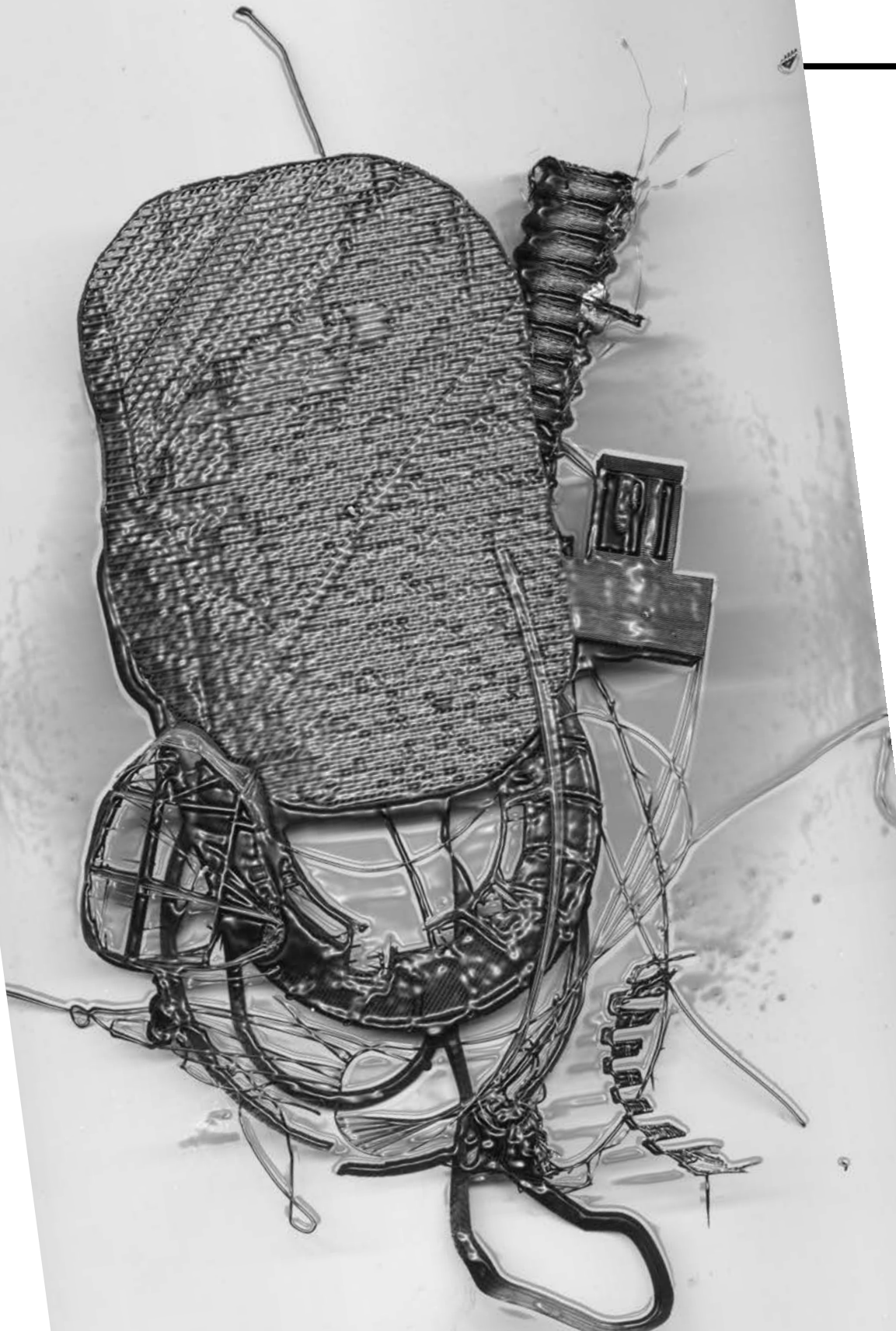
Notes

1. Wilk, Elvia. "The Artist-in Consultance: Welcome to the New Management." *E-Flux Journal*, 2016. http://www.e-flux.com/journal/74/59807/the-artist-in-consultance-welcome-to-the-new-management/.

This essay discusses art and artist in relation to consultants and traditional forms of corporate management. Wilk speaks about contemporary shifts in knowledge economies and consumer roles in relation to artists in consultants positions.

2. Freinkel, Susan. "A Brief History of Plastic's Conquest of the World." *Scientific America*, May 29, 2011. Accessed 2017. https://www.scientificamerican.com/article/a-brief-history-of-plastic-world-conquest/.

Freinkel gives a thorough overview of the advent of plastic and its shaping of the way we see the world today. From economic standpoints to chemist inventing new materials.

3. Neil Gershenfeld. "How to Make Almost Anything: The Digital Fabrication Revolution," *Foreign Affairs: Vol. 91 #6,* 2012, 43-57

Making Almost Anything is an overview of the history at MIT's Atoms and Bits lab where numerical milling and additive manufacturing develop alongside industry. Gershenfeld states multiple technologies that are on the brink of changing the world, from nanotechnology to cancer cell treatments.

4. Yego, Dena Q. "On Ketamine and Added Value." *E-Flux Journal,* May 2017. http://www.e-flux.com/journal/82/133913/on-ketamine-and-added-value/.

Yego touches on K-hole a collaborative artist trend forcasting group and economic shifts related to new changes in advertising and business production, along with branding. This essay talks about the artist's role through research into these topics and making contemporary work about consumerism.

5. Barthes, Roland. "Plastics." *Mythologies,* 1957.

Barthes discusses the "fashion" of plastic and its popularity in capitalist markets through the mid 20th century.

6. Allahyari, Moreshin and Daniel Rourke, "The 3D Additivist Cookbook" 2017

This book (interactive PDF) is a compilation of critical writings, essays, 3-D printing files, and interviews of 100 artist and designers who are working in the realm of additivist or 3-D printing technology. Notes on speculative design, critical materials, and technological processes investigated within the last 5-10 years are all included in this publication.

7. Ayr. "I'd rather be outside." Artificial Labor, *E-Flux Journal,* 2017

The focus of this essay is on the political implication of new architectural technologies like concrete printing. The essay also discusses larger themes related to 3-D printing and how there is no strategy in plan to utilize these technologies for the common good.

9. Sterling, Bruce. "Shaping Things". MIT Press, 2005.

This short book makes a statement about the future of programmable objects. It talks about objects all being connected to the Internet of Things and their data being as valuable as the object itself. It discusses larger concepts of objects transcending through time and human relationship to markets and economies.

10. Benkler, Yochai. "Peer Production, the Commons, and the Future of the Firm." Strategic Organization 15, no. 2 (2016): 264-74. https://www.nyu.edu/projects/nissenbaum/papers/jopp_235.pdf.

Commons based peer-production is a concept developed by Benkler to understand how open-source tools and software are created through communities that are disperse throughout the world.

11. Manely, Kevin."How 3-D Printing Will Make Manufacturing in America Great Again."http://www.newsweek.com/2016/04/15/3d-hubs-3-d-printers-manufacturing-china-443350.html, 2016

In our current political state Manely writes an article about the aspirations of President Trump and the industrial sector to bring jobs back to America's rustbelt states. Manely is skeptical of 3-D printing's role in creating a new industrial shift.

12. Greenfield, Adam. "Radical Technologies: The Design of Everyday Life" 2018.

Greenfield depicts our relationship with the networked objects, services and spaces that define us. He asks us to re-evaluate the Silicon Valley consensus determining the future and reconsider how technologies drives consumption.

Notes

13. "Expectations vs. Reality: The Future of Consumer 3-D Printing." Mosaic Manufacturing. Accessed 2018. https://www.mosaicmanufacturing.com/blogs/news/expectations-vs-reality-the-future-of-consumer-3d-printing.

This blog discusses in article format the role desktop and consumer 3-D printers play in the transformation of contemporary consumer landscapes. It talks about the opportunities for technological growth and also the "let down" of new products that are pushed to market.

14. Latour, Bruno, and Fien Veldman. "The Parliament of Things." The Parliament of Things. www.theparliamentofthings.org.

Quasi-objects is a term coined by Latour to explain how society projects value and certain social and political agendas onto objects.

Index

Symbols

Check (top left, teal):
4769
67-50
532
COLUMBIA
GEORGIA
DOLLARS
Bill's Corner
CA. P.L.
NS 6-46-3320

BORROW WHERE YOU SAVE ☆ BORROW
YOU SAVE ☆ BORROW WHERE YOU SAVE ☆

Time card (right):

			REGULAR TIME
1ST DAY	IN OUT	NOON	600
	IN OUT	P.M. 6	1200
2ND DAY	IN OUT	NOON	600
	IN OUT	P.M. 6	1200
3RD DAY	IN OUT	NOON	600
	IN OUT	P.M. 6	1200
4TH DAY	IN OUT	NOON	900
	IN OUT	P.M. 3	1200
5TH DAY	IN OUT	NOON	
	IN OUT	P.M.	
6TH DAY	IN OUT	NOON	+12 hrs.
	IN OUT	P.M.	Hol. Pay
7TH DAY	IN OUT	NOON	(2 day 6 hrs)
	IN OUT	P.M.	

TOTAL   TOTAL 27 33

Correct as shown. Pay Received
W. E. Perry
Lathem Time Recorder Co., Atlanta, Ga.
Printed and Rotary Cut in U.S.A.   Form 1900L

Reg. Hrs.
Extra Hrs.
Rate
Amount
Reg. Old Age Ben.
Fed. Withholding Tax.
State Withholding Tax.
Insurance
Government Bonds.
Miscellaneous.
Net Wages
Total

Left card (savings):
SAVINGS ACCOUNT
TEMPORARY RECEIPT
DATE
INTEREST
WITHDRAWALS
SAVINGS DEPOSITS
CURRENT BALANCE
363611

Sunday School card:

Dear Sunday School Teacher And Worker:

Our regular monthly teachers and workers meeting
will be held at 7:30 P.M. on Friday, September 22
at the home of the Denisons, 5815 S. Tripp Ave.
If you have a Rally Day book please bring it along.
The Lord expects you to be there. Come with your

S S SECRETARY

Bottom left:
Series D — MOD Account   Nº 363611
REVOCABLE SAVINGS PROXY
I/we appoint Charles W. Scales, or

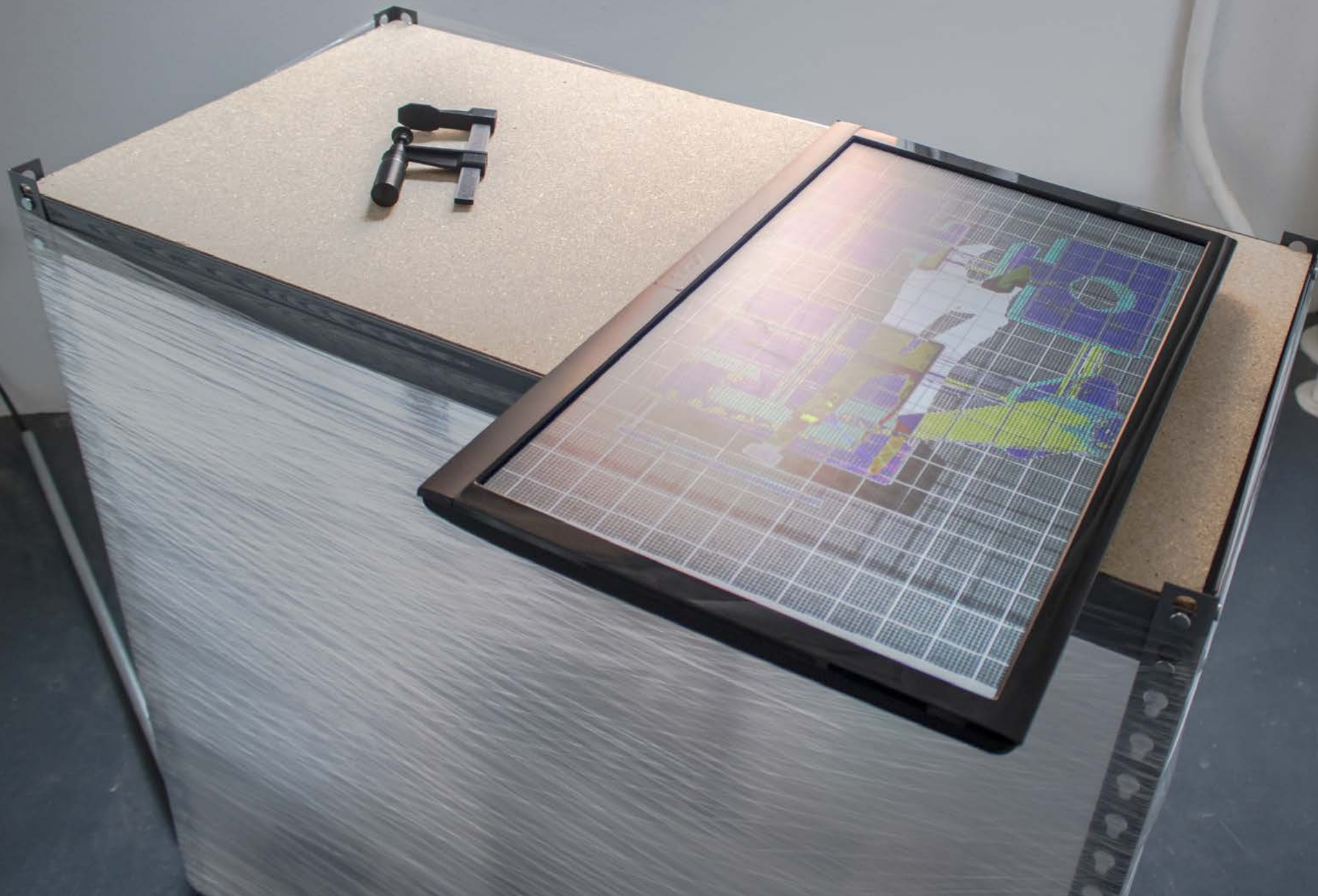**Bottom center:**
IMPORTANT

Bottom right:
INFORMATION FOR SAVERS
SERIES "D" ACCOUNT

Consumer Catalog

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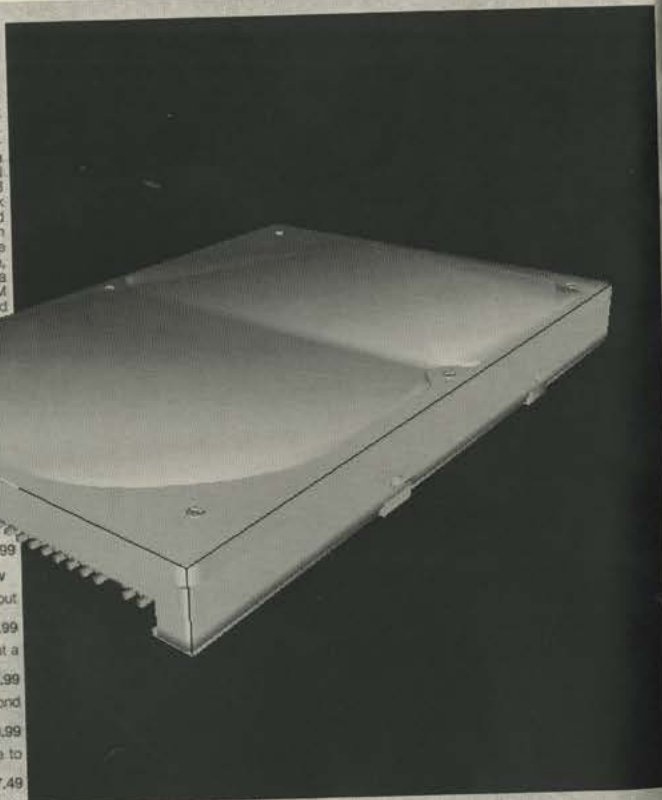3 E 32247—Wt. 22 lbs............. $429.99

Black ribbon for PS/1 printer.
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†Was prices from our 1991 Fall Big Book.

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A. Start-up kit with 2400 baud external Hayes Personal Modem.
3 F 32568—Wt. 3 lbs............. $159.99

B. Start-up kit without modem. Wt. 2 lbs.
3 F 32566............. $39.99

PS/1 Printer
SAVE $20

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1. COBRA INTENNA® CORDLESS TRIM STYLE PHONE. This cordless has a built-in handset antenna so there is nothing to extend, bend or break. Clear Call® circuitry provides sharp sound quality of a corded phone. It also features last number redial and flash to optional access services. There's no need to push the talk/standby button because this phone has an automatic standby. Just take the handset out of the cradle and use; then replace it to the cradle when finished. Warranted.** See Note on the facing page.
3 E 35538—Ivory   3 E 35537—Blue
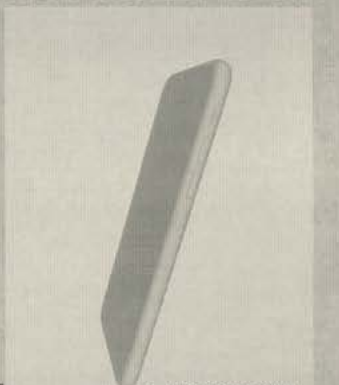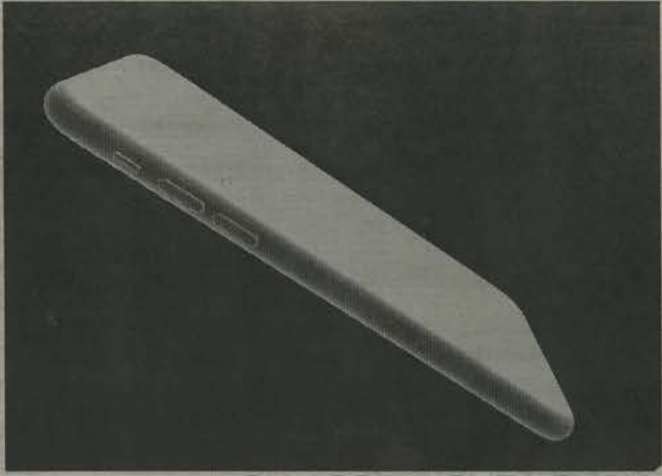3 E 35536—Black
Wt. 3 lbs. .... Each $77.99

2. SOUTHWESTERN BELL FF650 MARK II CORDLESS gives you more freedom with an incredible 1000 foot range; up to 8 football fields end-to-end. DigiClear Plus™ circuitry for superior audio performance. Phone features auto redial, mute button, hi/lo volume control, clear button for misdialing and low battery LED indicator. Digitally coded security feature protects your privacy. Uses built-in Ni-Cad battery, included. Not hearing aid compatible. Warranted.** See Note on the facing page.
3 E 34944—Wt. 3.40 lbs. $79.99

3. $10 MONTHLY.* SONY SPP-120 CORDLESS TELEPHONE has a stand-alone handset design and features multi-channel access scanning of 10 channels. That coupled with the noise reduction system helps provide you with a signal that's clear and static-free. Extended 7-day battery standby power and dual rechargeable battery packs in the handset. 2-way paging between handset and base. Last number redial, 3-number one-touch memory dialing and 10 number speed dialing are also featured. Security code system with 1 million combinations. Warranted.** See Note on the facing page.
3 E 34979—Wt. 3.31 lbs. $174.99

4. SAVE $5. GE 2-9515 CORDLESS PHONE has Crystal Clear™ circuitry that reduces static and extends your clear voice range. Move about freely because the phone will warn you when you are out of range. Phone has 10 number memory speed dial, last number redial, and a low battery indicator. Digital security system prevents false rings from other cordless phones. 2 channel switching to aid in clear reception. Recharging cradle and a portable phone cradle. Warranted.** See Note on facing page. Was $99.99 in our 1991 Fall Big Book.
3 E 34918—Wt. 3.81 lbs. $94.99

5. SAVE $5. BELL SOUTH 689 CORDLESS PHONE has 10 channel auto scan to always give you the clearest channel. Compander "Filtered Sound" circuitry reduces static and improves clear speaking range. 10 number memory speed dial with last number redial. Battery low indicator and tone pager from base to handset. Returns automatically to standby mode. Recharges while upright or level. Break resistant rubber antenna. User replaceable Ni-Cad battery and antenna. Warranted.** See Note on facing pg. Was $99.99 in our 1991 Fall Big Book.
3 E 34913—Wt. 2.63 lbs. $94.99

6. SAVE $5. PANASONIC 3720 is a 10 channel cordless phone with remote channel selection for the clearest signal. Auto intercom and 2-way paging lets you talk or send a tone from the base to the handset. Comes with a flexible short antenna. Volume control lets you adjust the volume to a comfortable level. Auto security system. Auto talk/ stand by switching. 10-station speed dialer. Sound Charger™ filters static out of the sound. Convenient one touch redial. Ni-Cad battery, (included) long life standby battery system. Warranted.** See Note on facing page. Was $99.99 in our 1991 Fall Big Book.
3 E 34912—Wt. 2.38 lbs. $94.99

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#ifndef CONFIGURATION_H          #ifndef CONFIGURATION_H
#define CONFIGURATION_H          #define CONFIGURATION_H
```

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