CROSSOVER LOGICS

A thesis by Serena Ho presented in partial fulfillment of the requirement for the degree Master of Fine Arts in Graphic Design in the Department of Graphic Design of the Rhode Island School of Design in Providence, Rhode Island, 2023. Approved by Master’s Examination Committee:

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As more and more of modern life is measured and calculated by computational machines, our realities are flattened into streams of data, bits, and binary. As a graphic designer operating under societal and technological systems that relentlessly speed up, simplify, and reduce the individual into a digital form legible to machines, my response to these conditions is to search for moments of imagination, poetry, and play within these structures. In my practice, I pair machined forms with human gestures to bridge the duality between computer and human logics, the rational and the emotional, and the measurable and unmeasurable aspects of human experience.

*Crossover Logics* documents my explorations at the edges of the schematic, the linguistic, and the coded, using and subverting these rational, conventional systems of communication to give form to personal experience and thought. Rather than reject the technological, I leverage technology to make work that is generative, with a multiplicity of meanings. Crossing between these seemingly opposite tendencies, I create patterns and structures that combine into alternative maps, diagrams, and systems that generate a poetic friction between the hard instrumentality of data logic and the intimacy of internal logic.

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A Fibonacci word is a specific sequence of binary digits (for example, 0 and 1) formed by repeated concatenation. The Fibonacci word fractal is a curve that is built iteratively by applying the Odd-Even Drawing rule to the Fibonacci word. It follows the logic of simple binary: For each digit of the sequence at position \( k \):

- **If the digit is** 0 —  
  - **Draw a segment forward.**  
- **If the digit is** 1 —
  - **Turn 90° to the left** if \( k \) is even.  
  - **Turn 90° to the right** if \( k \) is odd.
BOUNDARY CONDITIONS

INTRODUCTION

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TWO DIALOGUES
Phenomenology is the philosophical study of individual experience and consciousness. This diagram was adapted from an image found on Are.na (original source unknown).
Irrational thoughts should be followed absolutely and logically.

SOL LEWITT, Sentences on Conceptual Art

Recently, while scrolling through Instagram, a New Yorker article called “The Data Delusion” appeared in my feed. In it, the author Jill Lepore poses an interesting thought experiment: imagine all of the world’s knowledge is stored in a single filing cabinet. The drawers are labeled, from top to bottom, Mysteries, Facts, Numbers, and Data. Mysteries “are things only God knows, like what happens when you’re dead.” The Facts drawer contains files full of information that can be proven by observation or experiment. The drawer of Numbers holds folders of tabbies, censuses, statistics—anything that can be counted or measured. The Data drawer is overflowing with knowledge that “humans can’t know directly and must be extracted by a computer.” Each drawer looks alike, but their contents are gathered through different modes of knowing. Mysteries are known through intuition, inspiration, and revelation, while facts, numbers, and data are gathered through observation, empiricism, reason, logic, and measurement.

I paused my scrolling to ponder these four drawers. A very long time ago, most knowledge was contained in the Mysteries drawer, but throughout history, has been re-filed to the Facts drawer (accelerating starting at the end of the 17th century during the Scientific Revolution), bolstered by evidence stored in the Numbers drawer (which began accumulating quickly with the emergence of modern statistics, roughly coinciding with the Industrial Revolution). The Data drawer, which had lain dormant for most of history, began filling up at breakneck speed with the Digital Revolution. This demystification of knowledge over the course of history was concomitant with advances in science and technology, pointing to the human urge to find significance in the inscrutable and to understand the underlying systems that govern the universe.

These days, it seems like there is little room left for mystery. Knowledge unverified by empirical evidence smacks of superstition, ignorance, and conspiracy. It seems like every aspect of my daily life is mediated and measured by ubiquitous computing devices. Even this article, which I thought interesting enough to integrate into my thesis, was served to me in my Instagram feed through the complex triangulation of personal data flowing from my ever more extensive digital life. Though to the machine I am just another data point to be used for some company’s profit, there is so much about me that it cannot measure. As the way I work, think, communicate, and create becomes increasingly shaped by computation, I grapple with the tensions between the programmed, unrelenting, precise, and at times dehumanizing qualities of technology and the fluid expansiveness of consciousness.

Don’t get me wrong—I deeply appreciate technology and all the ways it’s enhanced my life. I take comfort in the solidity of knowledge that comes from facts, numbers, and data. But I find myself wondering—what sorts of mysteries lie in the human mind, in my mind? Graduate school has been dedicated to exploring this question, a journey of looking deeply into myself and attempting to understand my personal creative process and inner life. This understanding is both the central inquiry and outcome of this body of work.

A designer, my craft is to transmit meaning through graphic representation so that it is understood by its audience. Graphic design is a discipline that deals with communication that is intended to be circulated and understood in the public spheres. While other art forms like literature, cinema, music, and fine art are often concerned with the realms of emotion, interiority, and the human condition, graphic design is a creative field that primarily serves commerce. However, can graphic design’s unique ability to communicate with language and image also be used to convey things as slippery as emotion and thought in ways that are accessible to others?

In my work, I seek to bridge the interior and exterior, the quantifiable and unquantifiable, using rational, technical systems as scaffolding for content that probes at the interiority of the self. Returning once again to the analogy of the four drawers, I apply the logic of facts, numbers, and data

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2. Though numbers can also be a type of data, in its modern usage, the term data refers to numbers (and other information) that you need a computer to count and study.

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SOL LEWITT, Sentences on Conceptual Art

INTRODUCTION

BOUNDARY CONDITIONS

ESSAY

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to explore the mysterious logic of being human. In so doing, I seek a poetic friction between the hard instrumen
tality of data logic and the intimacy of internal logic.

Meditating on the subjective using objective means, I
attempt to measure the unmeasurable as a way to make
sense of it with analytical detachment. For example, I use
the concept of random access memory to process grief and
borrow the language of information graphics to organize
my emotions. On the other hand, in studying the objective
using subjective means, I challenge the impression of infi
nity that facts, numbers, and data have, offering alterna
tive, more personal interpretations. In my project Market
Picture, I encode stock data within spreadsheets into woven
patterns to meditate on the alienation I felt as an employee in
the corporate America.

My investigations take the form of Internal Schematics,
Invented Grammars, and Ornamented Encodings. Internal
Schematics adapt the technical language of schematic di
agrams as symbolic representations of consciousness. In
Invented Grammars, I seek alternatives to the established se
matic meanings of language and invent lexicons of my own.
Ornamented Encodings employ software programming to gen
erate densely detailed worlds that connect to the heritage of
craft and the decorative arts. Each represents an amalgam of
social, economic, and non-functional.

4 Random access mem
ory or RAM is a form of
computer memory that can
read or change data in any
order, regardless of its
physical location on a chip.

5 See Random Access
Memory on page 46.

6 See Iterations
(Providence, RI) on
page 30.

7 See page 112.

8 That which is emotional, indirect, ambiguous, assoc
iative, enigmatic, mystical, and non-functional.

Dingsun further argues that the practice of chime
ric worlding calls for “epistemic disobedience,” taking the
“symbolic systems of oppression” that we all operate under
and “strip[ing] them for parts, combining them with other,
more marginalized knowledges...We can take what has been
deemed ‘esoterica’ or ‘folk,’ and give them equal impor
tance with conventional structures of knowledge.” Indeed,
I frequently find myself merging technical frameworks with
my emotions to convey information (schematic diagrams, lan
guage, and computer memory that can read or change data in any
order, regardless of its physical location on a chip.

This methodology of layering the conventional with
personal and poetic systems of meaning is what
graphic designer Tiger Dingsun refers to as “chimer
ric worlding” in his essay “Chimeric Worlding: What Can
Graphic Design Learn from Poetics and World-building?”

Graphic designers, too, can develop their own visual
language in the same way that a poet might develop
any number of poetic frameworks through which to
interpret reality, by fitting together multiple external
and internal systems of meaning. We are already adept at invo
king widely shared, conventional sys
tems of meaning in order to make our work func
tion on the basis of clarity; but it is also possible
for clarity to exist simultaneously with another,
mutually exclusive effect that comes from fortifying
conventional logic with a graphic designer’s own
internal logic...I might call this methodology “chimeric
worlding,” to emphasize the fact that these worlds,
which graphic designers and their audience cohabit
together, are cobbled together from the DNA of various other worlds, and are richer
because of this multiplicity.


Ornament has been coined by artist Ian Cheng from his essay “Chimeric Worlding: What Can Graphic Design Learn from Poetics and World-building?” to describe the creation of convincing fictional universes, worlds involving setting up the laws of a world and playing out the world’s narrative according to these laws.

9 Dingsun, “Chimeric Worlding: What Can Graphic Design Learn from Poetics and World-building?”


11 Dingsun, “Chimeric Worlding: What Can Graphic Design Learn from Poetics and World-building?”

12 Ornament has been a contested subject in architec
ture and the arts since the turn of the 20th century.
It is often synonymous with decoration, embellishment, excess, and kitsch, violating the modernist axioms “form follows function.”
These systems, typically gendered as feminine and associated with domesticity, come from a long history of ethnic and communal craft traditions from around the world and stand in opposition to the highly legible, ordered forms of Eurocentric high modernism.

However, what may appear as dualities are often, in reality, fluid; though opposites, they are also relational, each containing an aspect of the other [FIG. 41]. While ornament and modernism are framed as irreconcilable aesthetic approaches, ornament can also “be seen not as a reaction against, but rather as an addition to, the work and thinking of the turn-of-the-century systems-obsessed designers. Certain tendencies unite the neo-modern and the neo-baroque as if they were part of one seamless continuing project.”

Disparate systems that are brought into relationship with each other reveal surprising connections between them, as two parts of a united whole rather than opposites [FIG. 61].

Modemism loosely describes movements in design and architecture (concentrated in Western Europe and the United States) that arose in the early 20th century in response to industrialization and its attendant economic and social changes. Neutrality, universality, and compatibility with the processes and aesthetics of mass production are key tenets of modernism. In its pursuit of so-called neutrality, it eschewed regional and historical visual traditions in favor of an “international” (though really Eurocentric) visual language characterized by grid systems, neo-grotesque typography, strict geometry, and minimalistic asymmetry that is still prevalent in contemporary graphic design.

In my practice, I investigate the oppositional and relational qualities that manifest in the boundary conditions that form between the confluence of dualities—between computer logic and human logic, the handcrafted and the mechanized, and the rational and the emotional. I try to make their logic visible by creating my own systems, the rules of which are encoded in processes and algorithms that give them form. Computers are an especially powerful tool in this endeavor, built to execute programmed instructions ad infinitum. I implement these visual systems using digital tools from within and without graphic design, from the Adobe Creative Suite to Google Sheets, as well as by coding my own digital tools. The choice of tool (which involves asking myself questions such as: Who makes this tool? What types of users does it have? What role does it play in our culture?) and how I use the tool in my work (for example, whether I lean into the tool’s native capabilities or subvert them) become an essential part of the concept of the final work. The visual output of these systems are notations of the system’s internal logic, as well as the specific decisions, values, and ideologies of the system’s author.

“So much of the world around us…is programmable somehow,” says designer Kelli Anderson. “All of these things have depths of hidden complexity to them that are observable…[I]f you can pay attention and bear witness to these structures, which govern that complexity, you can build something that hacks into it and runs off of it.” Like a mathematical formula that elegantly describes the kaleidoscopic swirl of a sunflower’s center [FIG. 61], capturing the programmable logic of a form is a means to understand its essential characteristics. It is an act of close attention, a way of seeing through the external surface of a form and into its interior structure. By programming the logic of a form—rather than the specific form itself—into an executable system, the system becomes generative, capable of creating infinite configurations. Contrasting with the manual production of singular, static visual artifacts, generative systems are dynamic and infinite, opening space for inter-action, chance, and the unexpected.

This is what Umberto Eco would call “open” in his essay The Poetics of the Open Work. In describing a musical composition that can be interpreted differently every time it is performed, Eco writes, “Every performance explains the composition but does not exhaust it. Every performance makes the work an actuality, but is itself only complementary.


to all possible other performances of the work.” The poetry of such a work comes from its “halo of indefiniteness...pregnant with infinite suggestive possibilities,” that stimulates “the private world of the addressee so that he can draw from inside himself some deeper response that mirrors the subtler resonances underlying the [work].” Open works are channels for complex, shifting messages, joining author, work, and viewer in dialogue with each other to make meaning.

Working with computing and generative design, I seek to pair the objective, the factual, and the functional with the open, the mysterious, and the poetic. I bring together in visuo-spatial form patterns and structures that combine and recombine into alternative maps, diagrams, and information visualizations. I’m interested in studying the structural essence of systems and the ways, both real and symbolic, that they shape our realities. While graphic design is often about mass communication and, as such, emphasizes clarity, impact, and consumability, I use the tactics of the discipline to create work that is multivalent in meaning and rearrangeable in composition, yet nonetheless accessible. What is offered is a generative interaction that attempts to bridge the duality between the measurable and unmeasurable aspects of human experience and the systems that mediate it.


Eco, 9.
If a thought lacks a physical counterpart, or cannot be substantiated by empirical fact, we consider that thought to be a fiction.

L A U R E N  V A N  H A A F T E N - S C H I C K, What is the Shape and Feel of the In-between?

Internal Schematics adapt the didactic language of schematics as tools to make sense of subjective content. Schematic derives from the word schema, which refers to both diagrammatic representation, often used in scientific contexts, as well as to an individual’s cognitive frameworks that help organize and interpret new information. The former definition suggests an objective picture of tangible reality, while the latter refers to a subjective construction of reality, prone to bias, distortion, and fictions.

Technical schematics, along with other methods of mapping, diagramming, and data visualization, wield the authority of empiricism, emerging as “technologies of management” that have the power to determine political systems, economies, and even our cultural values. They use measurable evidence to draw logical conclusions about the world. However, as Peter Hall argues, “Rather than simply describe a preexisting world, these technologies, in their methods of framing, selecting, and predicting, make up a world.”

1 The concept of schemata in psychology was first introduced by Jean Piaget, who is most well known for his work on child cognitive development.


3 See Six Studies in Internal Schematics on the next page.
Andrew Kuo creates emotionally intricate infographics that take the form of hard-edge paintings. Colors and compositional choices are explained in a legend below the painting. For example, in Good! (5/4/20) pink stands for “snacking angrily” while blue stands for “plotting diabolically.” I share the same impulse to translate the everyday vicissitudes of emotion into quantifiable, coded entities.

Agnes Martin’s rigorous gridded paintings give the appearance of rationality and obsession, but as an artist, Martin worked from a place of spirituality and meditation. “What we make is what we feel,” she said in a 1976 interview. She was deeply influenced by a wide range of spiritual philosophies such as Calvinism, Vedanta, and Buddhism. I’m interested in the way she distills her relationship to spirituality into a minimal palette of visual elements—color, plane, and line.

I once visited a Chinese fortune teller with my mom when I was around 8 years old, and I remember seeing the fortune teller consult a mysterious diagrammatic text as he explained my academic and professional prospects. The Chinese word for fortune telling is suan ming, or “calculating fortune.” The fortune teller was most likely using Ba Zi or the Four Pillars of Destiny, a Chinese system of cosmological astrology that divines a person’s fate based on factors such as their birth year, month, day, and hour. Although none of the fortune teller’s predictions came true, I’m still intrigued by the apparent analytical rigor of my culture’s ancient divination traditions.

Hilma af Klint’s paintings articulate her spiritual worldview using an abstract vocabulary of biomorphic forms, geometric shapes, and diagrammatic symbols. Working before abstract art took root in the art world, she arrived at this visual language through visions and communication with divine spirits. Unconventional, to be sure, but the first time I saw her paintings, I was mesmerized by the transcendent and quasi-scientific qualities of her work, as well as her spiritually-charged, intuitive process.

The premise of Theosophists Annie Besant and C.W. Leadbeater’s Thought-Forms is that thoughts are things that have appearances that correspond to the quality and nature of the thought. (Pictured above is Fig. 31 from Thought-Forms, representing the thought form of an actor waiting to go on stage). Theosophy was an occult religious movement in the late 19th century popular particularly in artistic circles, as people sought to reconcile religious belief with scientific advancements and the philosophies of other world religions, attempting to join mysticism with scientific reason. Thought-Forms influenced artists including Hilma af Klint, Piet Mondrian, and Wassily Kandinsky, artists who sought to capture realities beyond visual perception by removing references to the physical world and moving towards a purely abstract visual language.
The first studio project I worked on in graduate school was called *Atlas*. Each student in the RISD Graphic Design MFA class of 2023 was tasked with twelve “labors” (inspired by the twelve labors of Hercules) to be performed around Providence, as a way to explore and locate ourselves in a new city and chapter in our lives. For example, we were asked to record twelve hours of weather, perform an intervention at a specified location, and superimpose one map onto a local map, then travel there and document our findings. After completing the labors, we translated the materials collected from our small odysseys into eight spreads that were compiled into a collaborative publication. This process opened my eyes to the possibilities of documenting personal experience as formal and narrative material in my graphic design work.

While completing my labors, I began reflecting on my circuitous route back to Providence—I had lived here before as a freshman at Brown University, though I transferred schools after just one unhappy year. Back for the first time after more than a decade, I found myself ruminating on things past while anxiously wondering what the future held. Having mapped, transcribed, and recorded all manner of things as part of the twelve labors, I began treating these thoughts as data points to be similarly collected, analyzed, and graphed. I created a series of diagrams to make sense of these meandering contemplations about the circular nature of time, personal growth, and trying to stay in the present.
LABOR Nº 2
Perform an intervention or change in a specified location.

I painted some rocks and sticks in bright colors and documented them in their natural habitat. However, because Atlas was a black and white publication, once the image was converted to grayscale, it effectively erased my intervention as if I had never even been to the place.
LABOR Nº 1
Visit Brown’s John D. Rockefeller, Jr. Library and share what you find.

I found a book at the library titled Births, Marriages and Deaths in the City of Providence, 1896 by Charles V. Chapin, and I began to notice the signs all around Providence that memorialize the many people who have lived their lives out in the city. Plaques on historical houses, street names, and statues all serve as sites of memory. As I traverse my own memories walking down the streets of Providence, I think about how being reminded of our pasts helps us define the present, and how our present also reframes how we think about our pasts.
LABOR Nº 8

Have someone film you doing one physical activity and produce a sequence of stills.

Me pedaling on my stationary bike gets me thinking about circularity, that feeling of moving fast but realizing you’re getting nowhere.
LABOR Nº 10

With a classmate, visit one of Providence’s twenty-five neighborhoods and spend fifteen minutes documenting it.

During a trip to the historical Riverside Cemetery in Pawtucket, I came across a headstone with the surname Start engraved into it. How ironic. What if I end right back where I started?

"We may regard the present state of the universe as the effect of its past and the cause of its future."

- Pierre Simon Laplace
LABOR Nº 6

Record, transcribe, and edit a fifteen minute conversation with a new classmate.

During a deep conversation with my new classmate Sun Ho Lee, using the popular New York Times “36 Questions that Lead to Love,” I tell her that I wish I worried less about the little things, revealing my deep desire to be awake to the present moment.

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L A B O R Nº 12

Pick a public space, and write down a large number of details about that space, in an attempt to know it fully and completely.

Inspired by Georges Perec’s essay *An Attempt at Exhauusting a Place in Paris*, I write down all the happenings I observe one afternoon in Lippitt Memorial Park. It’s an exercise in presence and attention. An Annie Dillard quote I read a long time ago floats into my mind, “How we spend our days is how we spend our lives. What we do with this hour and that one is what we are doing.”

Date: Sep 11, 2021
Time: 12:03 PM
Location: Lippitt Memorial Park

Many people are crossing the park from the street to go to the farmer’s market. It’s warm and I take off my jacket.

Leaves rustle in the light breeze. There are many children running around and playing. There’s a bright purple, yellow, and pink jungle gym. There is a large party picnicking on blankets in the shade of a tree. Two children run circles around the blankets. A kid’s bike with blue streamers on the handlebars leans against a tree. Chatter, laughing. Sounds like the weekend.

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**“HOW WE SPEND OUR DAYS”**

THE PARK FROM THE STREET TO GO TO THE FARMER’S MARKET IT’S WARM AND I TAKE OFF MY JACKET. LEAVES RUSTLE IN THE LIGHT. THERE ARE MANY CHILDREN RUNNING AND PLAYING.

IS OF COURSE HOW WE SPEND OUR LIVES.

WHAT WE DO WITH THIS HOUR AND THAT ONE IS WHAT WE ARE DOING."

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**THE WRITING LIFE, ANNIE DILLARD**

"ON BLANKETS IN THE SHADE OF A TREE TWO CHILDREN RUN CIRCLES AROUND THE BLANKETS A DOZEN EGGS WHICH DOES ONE VEGGIES AND IN PARTICULAR HAVE SUCH A LARGE LINE IT’S AT LEAST PEOPLE SEE A SMALL FOUNTAIN SITTING ON THE RIM OF THE ROUND FOUNTAIN IN THE MIDDLE OF THE PARK."

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"WHAT WEAK?"

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**“HOW WE SPEND OUR DAYS”**

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"WHAT WEAK?"
Obtain three items for under $6 sum total from the Ocean State Job Lot.

I find a strange melancholy in the insistent happiness of this cheap smiley face ice tray I picked up at Rhode Island's favorite dollar store, Ocean State Job Lot.
In *Random Access Memory*, I use a concept of the same name drawn from computer architecture to represent the process of grieving many years after a loved one’s death. Random access memory is a form of computer memory that can be written and read in any order. In the same way, even though human memory is “written” sequentially, it is accessed randomly. In grieving a person who no longer belongs to the present flow of time, their presence is reconstructed with memories of them, taking different configurations at different points in time as some memories fade or shape-shift and others come to the fore.

In this project, I reflect on the memory of the person I lost, printing these reflections on transparent surfaces recalling glass slides used in laboratories. Flower motifs accompany the text, alluding to her passion for flower arrangement as well as the custom of leaving flowers for those who’ve passed. When printed on the slides, they appear as pressed flowers, a process used to preserve their fleeting life. The slides are arranged in a wooden stand as cross-sections that make up a larger sculptural form; when seen collectively, they form a cloudy, unreadable depth. Individual memories can be removed and examined, but they are replaced in a different order, forming a new composition each time.

It was a challenge to tackle the weight of grief in this project—I had never experienced such exposure and vulnerability in making graphic design work. I tried a variety of strategies in an attempt to depict my personal experience with grief, from including photos of the person I lost to writing journal-like entries describing my grieving process. However, I felt that these more figurative and autobiographical approaches didn’t provide access points for others to enter the work. Landing upon the structure of random access memory allowed me to add a level of abstraction to my deeply personal narrative. It provided me with a degree of analytical distance to translate a charged emotion into a form that conveyed my story while maintaining an indeterminacy that allows for unfolding, evolving understanding.
Extra slots in the frame allow memories to be removed and replaced in the back, so the object changes in configuration.
When we talk about pleasant like you these days, a soft blur is a sad thing.

less but with child I'm afraid

we are starting no matter how old I get

I feel the finality of your

more

whose life was simply cut that it

so short?

the brain stadium
You'll never get to see who I will become.
I’ve always been interested in the practice of meditation as a means to heighten awareness and attune the mind to the body. Meditators use various strategies to enter meditative states, such as chanting, walking, and counting beads. In this experiential installation, I wanted to create a space that made people feel transported, inducing interior calm and mind-body connection.

Visitors walk (one at a time) through a closed door of an empty classroom and are seated on a meditation cushion in the center of the darkened room. They face a circular screen that bathes them in colored light. The visuals that they see are created by a sound and movement-reactive light projection, powered by TouchDesigner, a visual programming language for real-time interactive media. A small microphone detects modulations in sound—from the meditator’s voice to the ambient music specially created for the installation—while a camera detects the meditator’s movements, resulting in variations in the colors and motion of the projection. The projection is a visualization of the meditator’s auditory and bodily experience, generated by the meditators themselves.

While incessant scrolling and swiping on digital devices often distances us from our physical bodies, my goal was to use technology to do the opposite. Can technology be utilized to sharpen one’s receptivity to the present moment and one’s awareness of the body in space through thoughtful experience design? Making This Silence Can Also Be Heard showed me the rich potential of work that leverages technology’s interactive qualities to invite both mental and physical engagement.
The circular form of the meditation pillow echoes the shape of the projection screen. Words from Etel Adnan’s Shifting the Silence, a poetic meditation on the nature of existence, are printed on the fabric.
The universe makes a sound—is a sound. In the core of this sound there’s a silence, a silence that creates that sound, which is not its opposite, but its inseparable soul. And this silence can also be heard.

ETEL ADNAN, Shifting the Silence
PART II.

INVENTED GRAMMARS
Our forms of articulation are limited—we can only see and think through what's possible with the language we have to articulate it. Once we expand on that language, we can produce entirely different worlds.

SUMAYYA VALLY

When I was a kid, my sisters and I would spend hours playing in magical worlds we conjured in our imaginations. We created dictionaries of unique lexicons, making up our own words to describe fantastic foods, supernatural phenomena, and fanciful objects that could not be described otherwise. Invented language allowed us to fully inhabit our imaginary worlds.

As a graphic designer, I’m still interested in exploring the edges of language, studying and creating glyphs and language systems which form Invented Grammars. I look at not only the denotative meaning of language, but also the aesthetic quality of text, how the conventions of the written word (e.g., typography, spacing, punctuation, etc.) can be adapted or broken to create novel readings of the text. Like artists Xu Bing and Mirtha Dirmasche¹ who practice the art of asemic writing,² I often prefer to shed semantic meaning altogether, retaining a visual structure that loosely references language yet asks viewers to create their own interpretations. Like Internal Schematics, which encodes the abstract logic of interiority using the familiar logic of information graphics, Invented Grammars contain ambiguous, personal symbols that press off the recognizable structures of language. The juxtaposition suggests meaning beyond words.

As these symbols concatenate into “sentences” and “paragraphs,” they begin to form readable images. Where do language and image intersect? I’ve always found it captivating that alphabets are modular, composed of a finite set of discrete units that are combined in endless permutations that generate infinite meanings. In this way, typography is contiguous with pattern, which is defined by the repetition of modular elements. Can you read a pattern like you would read a text? How can images and symbols communicate with the logic of language while transcending its semantic and aesthetic limits?

¹ See Six Studies in Invented Grammars on the next page.
² Asemic writing is a hybrid art form that fuses text and image into a wordless form of writing, freeing it to subjective interpretation.
SIX STUDIES in INVENTED GRAMMARS

BRIAN ENO

Music for Airports, 1978

Unable to read or write music, Eno invented his own system of symbols for his graphical score to his album Music for Airports. Though I can’t read these notations, the simple marks still manage to possess rhythm and musicality. I love the idea of creating a highly personal language just for one.

XU BING


First displayed in Beijing in 1988, this set of woodblock printed books and scrolls contains four thousand invented Chinese pseudo-characters. Although displayed with all the pomp of the great classical Chinese books, these books are imposters. Though they mimic the form of Chinese characters, they are unreadable. Classic books like Confucius’s Analects and Laozi’s Dao De Jing (The Book of the Way) define much of Chinese cultural values, but Xu’s subversion of the form calls us to question the authority of language.

TYPOGRAPHIC ORNAMENTATION

Unable to read or write music, Eno invented his own system of symbols for his graphical score to his album Music for Airports. Though I can’t read these notations, the simple marks still manage to possess rhythm and musicality. I love the idea of creating a highly personal language just for one.

DANCE NOTATION

I’m fascinated by the complex graphic symbols that have been invented by choreographers to capture the ephemerality of dance. “Systems of dance notation translate human movements into signs transcribed onto flatland, permanently preserving the visual instant,” Edward Tufte writes in Envisioning Information.† Pictured above: Beauchamp-Feuillet Notation, a French system for recording Baroque dance (c. 1720).


WASSILY KANDINSKY

Succession, 1935

Succession, one of Kandinsky’s later abstract works, features biomorphic forms arranged along four horizontal fields, reminiscent of musical notation. These forms reveal Kandinsky’s interest in scientific drawings and natural history. They make me think of the hieroglyphics of some distant alien race.

MIRTHA DIRMASCHE

DIARIO Nº 1 AÑO 1, 1972

In her Diario series, Mirtha Dirmasche translates the daily newspaper into asemic script. The column structures are instantly recognizable, but the cryptic gestural marks evade meaning, inviting viewers to make their own. “It’s not important what happens on a sheet of paper,” said Dirmasche, “the important thing is what happens within us.” There’s a certain feeling I get when I look at Dirmasche’s work that I just can’t put into words, but maybe that’s the point.

Typography and book design has historically had a deep connection to ornamentation. Manuscripts, particularly from Western Europe and the Middle East, were decorated with detailed illustrations and borders. Although these hand rendered flourishes rapidly declined with the advent of printing, ornamentation was adapted to moveable type. Dingbats in the type case were typeset into decorative motifs that complemented the design of the typeface. Pictured above: printers ornaments by Frederic Warde (c. 1928) and stenciled ornaments by William Addison Dwiggins (c. 1913).
In Marigold, I use type design technology to create playful floral glyphs that suggest their own kind of grammar. I adapt the conventions of language to create an asemic system, devising textual forms that have no specific semantic content. Although each glyph in Marigold maps to a letter on a standard keyboard, its syntax has its own logic inspired by floral ornamentation and plant growth. This grammar is implied by the formal qualities of the typeface—certain combinations of glyphs link together to form vines; ligatures cause glyphs to branch; capitalizations turn buds into flowers.

Fascinated by the idea that carpets can “be seen as ‘woven texts’ to be deciphered as languages,” I created compositions using Marigold’s glyphs that loosely echo the layout of carpets from the Middle East, which are rich in narrative and symbolic meaning. This is just one possible permutation for the typeface. To realize the full generative capabilities of the typeface, I also built an online type tester tool to enable users to make their own compositions.


Lowercase letters represent buds. Left and right facing versions of buds help with creating symmetrical ornament, and are assigned keys on the keyboard that are in close proximity for ease of use.

Buds “bloom” in their uppercase forms.
Trees. Vines.

Tree glyphs have ligature forms to evoke a sense of growth and branching.

Vines serve as connectors to join glyphs into more complex forms.
A composition inspired by Middle Eastern carpets.
An online type tester tool allows anyone to use Marigold to create and export their own compositions, as well as download the typeface.
A Toolkit for Sticking Together, created with collaborators Lian Fumerton-Liu and Sun Ho Lee, was developed from a prompt to create a stencil. Traditional stencils are typically thin sheets of material perforated with various designs, and we were interested in their generative and modular qualities. However, we also wanted to question what a stencil could be. We gravitated to the playful nature of stickers, which possess the generativity and modularity of traditional stencils, but can be applied on three dimensional surfaces and are easily removed.

Using office supply colored dot labels, we began creating collaborative compositions by making up simple rules for ourselves like: put down one sticker so it touches the last. We were intrigued by the way the forms that emerged became a language that told the story of our playful interactions. We set out to further investigate how we could codify the rules of this language, one that visualized the relationships between people. What emerged was A Toolkit for Sticking Together, containing sticker packs of simple forms drawn from our initial experimentation with the dot labels and rule sets that define how to attach the stickers to a surface. Our hope was that our toolkit would allow people to reimagine the surfaces in their environment through unexpected, joyful ways of collaborative making.

→ A colorful plexiglass box contains all the items in the kit.
Prototyping our kit in the community with colored dot labels. We asked friends and strangers to spend three minutes creating dot compositions according to different rule sets we were testing.

After prototyping, we finalized the contents of the kit, which includes four rule sets (etched in plexiglass) and sticker packs.
Toolkit Experiment 1
Surface: CIT Stairs
Rule Set: #1
Collaborator Number: 3
Relationship: Friends

Toolkit Experiment 2
Surface: Two Pants
Rule Set: #3
Collaborator Number: 3
Relationship: Friends
Tookit Experiment 3
Surface: Drinking Fountain
Rule Set: #3
Collaborator Number: 3
Relationship: Classmates

Tookit Experiment 3
Surface: Window Sill
Rule Set: #3
Collaborator Number: 3
Relationship: Strangers
A Toolkit for Sticking Together
zine, which contains documentation and process of our collaboration.
In James Bridle’s New Dark Age, he posits, “In fact, conspiracy theories seem to be the most powerful narrative form of our time. I think that’s because the world has become so extraordinarily complex. It’s incredibly difficult now to write simple stories about the world, which is what we all yearn to hear.” While conspiracy theories can be propagated on both the left and the right of the political spectrum, as I undertook this project, the most salient and influential conspiratorial narratives were being disseminated on the internet by alt-right fringe communities. Their hashtags, memes, and inside jokes became so charged with meaning that they acquired “meme magic”—viral power that can make something on the internet happen in the real world (which we saw all too clearly in the January 6th attack on the US Capitol). These conspiracy theories came together to form complex narratives (think QAnon or Kekistan), which attracted thousands of adherents and became a sort of modern occult folklore.

I started researching the symbols, coded language, hashtags, and memes that form the Invented Grammar of the alt-right. The linguistic shorthand used in these communities functions in several ways. It becomes a tribal marker of group belonging for those who think they’ve discovered the “Truth” (with a capital T), and distinguishes them from ordinary people (termed “normies” by the alt-right) who just don’t get it. I began to categorize each of the symbols according to a taxonomy drawn from Umberto Eco’s On-Fascism, which defines the fourteen qualities of eternal fascism. I designed and developed a website to archive my research, creating a publicly accessible online dictionary of the language I dubbed Rightspeak in an effort to bring critical awareness to this nefarious, coded language and its relationship to political power in American society.

1. For example, the famous “eye for an eye” law: “If a man should blind the eye of another man, they shall blind his eye.”


4. Idle state of Rightspeak. If a user has the page open for over ten minutes without any activity, various characters popular in the alt-right internet sphere begin to invade the page.

5. Kekistan is a fictional country invented by members of the alt-right online community 4chan. Self-identified Kekistanis are alt-right protesters who feel “persecuted” by excessive political correctness.

6. In George Orwell’s dystopian novel 1984, the ruling totalitarian party creates Newspeak, a language of impoverished vocabulary designed to limit complex and critical reasoning. The political contractions of Newspeak—words like crimenallity (thought crime)—were inspired by similar words used by German and Russian dictatorships (Nazi Socialism) and criminology (criminal). Rightspeak is a play on this concept.

Rightspeak is an online index of research on the alt-right’s mobilization of symbols and images on the internet as a political tool and its broader connection to the communications strategies and ideologies of totalitarian regimes of the past. Inspired by an ancient Mesopotamian cuneiform tablet housed in the Providence Public Library’s Special Collections, I began thinking about the genesis of written language and its relationship to power. Written language in Mesopotamia was a technology accessible only to the political and religious elite, and enabled the codification of law: The Code of Hammurabi, the earliest known surviving legal text, was inscribed in cuneiform on a stele and decreed a form of harsh retaliatory justice.

“Hammurabi himself was probably the firstiterate king, and his empire building manifested the connection between writing and social control,” writes James Gleick in The Information. This led me to wonder: In the age of the internet, who controls the production and dissemination of writing and how does it influence a society’s narrative? And to whom is it legible?

RIGHTSPEAK
Of language and power
WEBSITE, FALL 2021

↑ Cuneiform artifacts: Assyrian cuneiform prism (top) and Code of Hammurabi (bottom).
A visual index of alt-right symbols categorized with tags sourced from Eco's 'Ur-Fascism'. Users navigate the index by panning, which evokes the vast endlessness of space that is the internet. View it at https://sph2116.github.io/rightspeak.
A side panel provides more detail about the index's tagging system.
NON-PLAYER CHARACTER (NPC)

NPC or “non-player character” is a meme that represents people (usually political liberals) that cannot think for themselves. Non-player character is a term that refers to computer-controlled stock characters that interact with the player of the game using a few scripted lines and simple actions. When the NPC meme first appeared on 4chan in 2015, it was accompanied by the following description: "If you get in a discussion with them it’s always the same buzzwords and hatcheysed arguments. They’re the kind of people who make a show of discomfort when you break the status quo like by breaking the normie barrier to invoke a real discussion. It’s like in a [video game] when you accidentally talk to somebody twice and they give you the exact lines word for word once more.”

The NPC meme features a crudely drawn bald man who is colored gray, and is a version of the Wojack meme which is popular on 4chan. The NPC meme rose to prominence in 2018 during the midterm elections, when a group of users from r/the_donald, Reddit’s largest pro-Trump forum, organized a trolling campaign on Twitter, using NPCs as avatars for their fake Twitter accounts. These accounts tweeted parodies of liberal anti-Trump rhetoric (e.g., “orange man bad”) at each other and at liberals. What started as a joke became a campaign of disinformation, as some accounts began encouraging liberals to vote on November 7th (Election Day is on November 6th). This resulted in Twitter banning 1,500 accounts linked to NPCs.

The New York Times published a story covering this event and the once niche meme went viral, experiencing an uptick in Google searches, media coverage, and a proliferation of NPC content. “Suddenly, a meme that had been hyper-localized to one field corner of the internet has been telegraphed to a massive audience in a jarringly forced display of virality that highlights just how quickly an inside joke from an insular community can spread with the oxygen of press coverage.”

The NPC meme is just one example of the way niche alt-right memes can be exploited as tools to orchestrate online trolling and spread alt-right political messaging. When these memes find their way to mainstream news outlets trying to provide coverage and analysis, their derision can be used to fuel the myth of liberal media bias.
Visitors can read relevant excerpts of Eco’s Ur-Fascism. Hovering over key terms displays clips from current events that are examples of those concepts in the real world.

**RIGHTSPEAK**

capitalism (which never much fascinated Mussolini) and you have Eco’s Pound[2]. Add a cult of Celtic mythology and the Grail mysticism (completely alien to official fascism) and you have one of the most respected fascist guns, Julius Evola[2].

But in spite of this fuzziness, I think it is possible to outline a list of features that are typical of what I would like to call Un-Fascism, or Eternal Fascism. These features cannot be organized into a system; many of them contradict each other, and are also typical of other kinds of despotism or fanaticism. But it is enough that one of them be present to allow fascism to coagulate around it.

### 81 THE CULT OF TRADITION

The first feature of Un-Fascism is the cult of tradition. Traditionalism is of course much older than fascism. Not only was it typical of counter-revolutionary Catholic thought after the French revolution, but it was born in the late Hellenistic era, as a reaction to classical Greek rationalism. In the Mediterranean basin, people of different religions (most of them indolently accepted by the Roman Pantheon) started dreaming of a revelation received at the dawn of human history. This revelation, according to the traditionalist mystique, had remained for a long time concealed under the veil of forgotten languages — in Egyptian hieroglyphs, in the Celtic runes, in the scrolls of the little-known religions of Asia.

This new culture had to be syncretistic. Syncretism is not only, as the dictionary says, “the combination of different forms of belief or practice”; such a combination must tolerate contradictions. Each of the original messages contains a silver of wisdom, and whatever they seem to say different or incompatible things it is only because all are alluding, allegorically, to the same primeval truth.

As a consequence, there can be no advancement of learning. Truth has been already spelled out once and for all, and we can only keep interpreting its obscure message.

One has only to look at the syllabus of every fascist movement to find the major traditionalist thinkers. The Nazi gospel was nourished by traditionalist, syncretistic, occult elements. The most influential theoretical source of the theories of the new Italian right, Julius Evola, managed the 1930s with The Fire of the Philosophers. He.

They didn’t wear feathers and headdresses

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When hovering over the term traditionalist mystique, which Eco describes as the Fascist worship of the traditional and the mystical as sources of primeval truth, a clip of Jacob Chansley takes over the screen. Chansley, also known as QShaman, participated in the January 6th attack on the US Capitol. Known for wearing a fur headdress and face paint, QShaman appropriates various spiritual traditions to lend mystical force and "insight" to his alt-right convictions.
PART III.

ORNAMENTED ENCODINGS
In 1804, a French weaver and merchant named Joseph-Marie Jacquard patented the Jacquard loom, a machine that encoded complex woven patterns as a sequence of holes punched through cards that were fed to the loom, paving the way for the automated mass production of patterned textiles. To prepare the cards, a pattern was first painted on grid paper and then translated row by row onto punch cards. If a square was painted, it was punched, and if not, no hole was punched—a physical form of binary code. With its machine-readable instructions, the Jacquard loom is seen as an early predecessor of modern computing.

Mathematician Ada Lovelace, who collaborated with Charles Babbage on what is considered the first proposed design for a computer, the Analytical Engine, observed, “The Analytical Engine weaves algebraic patterns, just as the Jacquard loom weaves flowers and leaves.”

Punch cards continued to be used in computing well into the 20th century, when the ornate flowers and leaves of western European decorative arts evolved into the rational grid systems of Modernism, an aesthetic informed by the principles of mass production. However, although the Jacquard loom, and later the computer, facilitated automation of the production of traditionally handcrafted objects like textiles, these technologies’ origins reveal a close relationship between the handcrafted and the computed, between ornament and code. “Amplification, complexity and detail are key to decoration,” says designer Denise Gonzales Crisp, “and the computer lets you do that.”

Generative algorithms are particularly well suited to produce detailed, recursive, and patterned forms found in ornament, and I’m interested in exploring the tensions wrought by automated digital production methods with surfaces that recall the aesthetics of artisanal and manual labor. However, particularly with the rapid rise of sophisticated AI engines that can produce images within seconds, I constantly ask myself what it means to give the appearance of complex or manual labor through automated processes without the skill or time that is required to create something by hand. Is my penchant for ornament and the appearance of the handcrafted merely a reaction to the erosion of value of an artist’s individual expression and artisanship from increasingly intelligent machines? Or does the human-machine creative partnership make work that is greater than the sum of its parts?

Rather than attempt to simply simulate the human hand with the computer, my intention is to leverage technology to augment the qualities of multiplicity and plurality that are inherent in human thought and creativity. If meaning is encoded differently with each iteration, it remains malleable to evolving interpretation. Ornament and generativity challenge the Modernist attitude that sees designers as problem solvers and simplifiers. Ornament allows for embedding history, layering narratives, and referencing traditions and vernaculars outside the Western canon, while generativity enables work that is complex, iterative, and open. In Ornamented Encodings, I make work using automated processes and unconventional tools, examining how these production models expand visual and conceptual possibilities and challenge traditional notions of value, craft, production, labor, and authorship.

The DecoRational intends to engage the discourse of ornament with that of rational design... The aim is not nostalgia, nor pastiche nor irony, but to reflect and engage the complexity of our time.

DENISE GONZALES CRISP, Toward a Definition of the DecoRational

1 In computing, to encode means converting information or instructions into a particular form.


3 To be clear, this relationship usually wasn’t a good one. Laborers destroyed Jacquard looms when they first began to appear in factories because of the threat they posed to their livelihoods.

4 Twemlow, “The Decriminalisation of Ornament.”

5 Inglis, “Ornament and Possibility.”
Channa Horowitz’s drawings on gridded paper use a system of her own devising called “Sonakinatography.” The system consists of a series of notations based on the numbers one through eight, which are each assigned their own color. Sonakinatography was developed to encode time and movement as scores for dancers and musicians, and the repetition of color and form creates a rhythmic pattern. I appreciate Horowitz’s rigorous systematicness juxtaposed with the specificity of her visual language. The painstakingly precise hand-rendered marks also serve as a record of the artist’s time and labor.

Middle Eastern Carpets

The Western use of carpets began through conquest and trade with the Middle East in the 13th century. Carpets from the Middle East have a rich vocabulary of motifs, including gardens, arches, lanterns, and vegetation, that both delineate space and provide portals to other worlds. What I find so beautiful about these carpets is that their ornaments have ancient embedded narratives that give them greater significance beyond their role as functional objects in the home. “It is a place that is both house and temple, a place of shelter and leisure, and a place for prayer. The frame of the carpet cuts and delimits a portion of the infinite, devoting it to human existence.”

† Pictured above: Turkish carpet from the late 18th to early 19th century.
† Covini, “The Carpet and the Territory . ”

Conditional Design is a design methodology created by Edo Paulus, Luna Maurer, Jonathan Puckey, and Roel Wouters. It generates design through a system of conditions that structure creative collaboration.

Edward McKeown, “Conditional Design.”

Conditional Design is a design methodology created by Edo Paulus, Luna Maurer, Jonathan Puckey, and Roel Wouters. It generates design through a system of conditions that structure creative collaboration. In the Conditional Design Manifesto, the artists outline their guiding principles: “Our work focuses on processes rather than products: things that adapt to their environment, emphasize change and show difference.” The forms that result from Conditional Design often create a sort of generative pattern, suggesting the underlying structure of the rules that created them. Conditional Design as a methodology is interesting to me because it shifts the designer’s role as the sole author of work to an orchestra—tor of frameworks and actions that allow design to happen, inviting others to participate in the work’s creation.

† Conditional Design was an inspiration for A Toolkit for Sticking Together, see page 81.

Emma Kunz was a Swiss healer and artist who worked in the early 20th century. Deeply spiritual, she created drawings by divining with a pendulum—an analog generative process. Kunz never intended these abstract geometric compositions to be seen as fine art; they were a means rather than an end, a record of communing with the divine. Kunz never intended these abstract geometric compositions to be seen as fine art; they were a means rather than an end, a record of communing with the divine. Kunz never intended these abstract geometric compositions to be seen as fine art; they were a means rather than an end, a record of communing with the divine.

† Similar to Hilma af Klint, see Six Studies in Internal Schematics on page 27.

Tauba Auerbach is an artist invested in the study of forms, particularly those forms that derive from the fundamental structures of the natural world, like waves, vortexes, and helices. Pattern and ornament are also an important part of this formal study, which the artist views as a kind of “collective automatic writing” across cultures. I appreciate how Auerbach probes at duality in their work conceptually, formally, and materially. For example, in Shadow Weave, Auerbach weaves pieces of black and white canvas to transform the two dimensional picture plane into an object that exists somewhere between textile and painting.

† Tauba Auerbach, S v Z (San Francisco: San Francisco Museum of Modern Art, 2020), 128.
In today's complex information economy, value is increasingly abstract rather than based on tangible goods and services. The stock market is perhaps the embodiment of abstract value, represented by digits and tickers that legions of professionals study, yet repeatedly fail to make sense of. This abstraction of value extends to the way we work, as advancements in technology, specialization of labor, large corporate structures, and a myriad of other evolutions in the modern workplace increasingly distance us from the products of our labors. David Graeber in his book *Bullshit Jobs* comments that as profits are “derived less and less from firms involved in commerce or manufacturing, and more and more from debt, speculation, and the creation of complex financial instruments, so [do] an ever-increasing proportion of workers come to make their living from manipulating similar abstractions.”

Having come of age during the 2008 financial crisis and working in corporate America in the years following, I experienced firsthand this abstraction of labor and economic value. Financial instruments became derivatives of derivatives that were so complex that no one foresaw the crisis that would cause financial institutions to fail with such wide-reaching consequences for individuals far removed from the stock market.

![Electronic transmission of stock data transformed financial markets. Ticker tape was the first electronic financial communications medium, and consisted of a printed strip of paper with stock price and volume data, which was sent over telegraph lines.](image)

Patterns were printed and stored in a manila folder “stock portfolio.” A real stock portfolio is an intangible entity stored electronically, but I wanted to play with the idea of a physical portfolio, contradicting expectations of what a stock portfolio is.

In *Market Picture*, I generate patterns that allude to woven textiles using live stock price data in Google Sheets. The formal qualities of the patterns make salient the logic of the spreadsheet in which they are created. Spreadsheets are tools for symbol manipulation, often used by highly paid financial analysts to divine the unknowable movements of the market, but are used in this project to create images that recall weaving, a de-valued yet very tangible and physical form of labor.

Much like the specialized lexicon of symbols and acronyms that are used to describe the stock market, the patterns in *Market Picture* abstract stock prices into vague impressions, implying deeper insight but concealing any true understanding. It calls into question the clarity and pre-science that market data claims to have, challenging what critic Benjamin Buchloh calls “the operating logic of late capitalism and its positivistic instrumentality.”

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ORNAMENTED ENCODINGS

PART III.
Users can enter any stock ticker and click the Run button, which pulls the monthly adjusted close price from the past twelve months and converts it into a pattern.
Key to “read” the pattern. While the patterns are designed to give the impression of unreadability, they can be decoded. The pattern simply encodes each digit of the stock price using a system similar to the Chinese abacus. Cells are colored according to the company’s Global Industry Classification Standard sector.

Along with monthly stock price, I created other patterns using various systems of my own invention for encoding price data. Here is a screenshot of a script that creates “totems” from a company’s market capitalization data.
Stock price pattern prints of the nine highest market capitalization corporations in the US, January–December 2022 (front). Colors indicate the company’s sector.

Monthly stock price pattern prints of the same nine companies (back). Prices in green indicate that stock price increased year-over-year in 2022, and red indicates that the price decreased (it was a particularly tough year for tech stocks).
“Generative art performs cosmogony,” writes Mitchell Whitelaw, “it brings forth a whole artificial world, saying, here is my world, and here’s how it works.” The canvas becomes a microcosmic world, populated by objects that behave according to the processes, relations, and actions defined by a system of the artist’s making. In Pelton Paintings, I develop the idea of canvas as cosmos by creating programmed images that pay homage to the cosmic, transcendental paintings of Agnes Pelton. I wrote a script in Photoshop that can produce an infinite number of permutations based on a palette of elements I extracted from Pelton’s body of work. I was interested in the capacity of a scripted image to evoke the creative hand of a painter, and to see whether it could project the symbolic richness and metaphysical vibration of Pelton’s paintings. Creating her visual world in code is not an attempt to imitate an Agnes Pelton painting; rather, it is an act of reinterpreting the rules of her universe through close analysis as a way to bring it to life.

A Pelton painting and the Photoshop script used to generate it.

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Cosmology is the branch of science that deals with the origin of the universe, especially the solar system.

Pelton’s artworks feature a common vocabulary of glowing orbs, luminous low horizons, stars, and mountainous landscapes.

Pelton’s paintings are compositionally often divided into thirds. The top third is occupied by sky and a randomly assigned framing device. A dynamically generated light to dark gradient drawn from a color palette sampled from Pelton’s work gives the impression of a glowing horizon.

The middle third contains a random number of luminous circles, each assigned a randomized position.

The bottom third is randomly populated with motifs drawn from Pelton’s work (mountains, waves, and circles).

After analyzing Pelton’s body of work, I attempted to capture the programmable logic of her compositions.
EMERGENCE, FRACTAL, LEXICON
Modular making

POSTERS, FALL 2022

Emergence¹, Fractal², Lexicon³ is a triptych of posters that reflects on and highlights key facets of my design process. The posters are created using a program written in Processing⁴ which tiles together modular units that can be combined to form generative patterns. The making of these posters followed a process that I use often in my practice: the creation of constituent pieces which are collaged together with both programming and by hand to form the final composition. I describe this way of working as emergent and fractal because it relies on simple units that form a more complex composition through systematic recursion, repetition, and transformation. These units constitute the lexicon that defines the visual vocabulary of my work.

1 In philosophy, systems theory, science, and art, emergence occurs when an entity is observed to have properties its parts do not have on their own, properties or behaviors that emerge only when the parts interact in a wider whole.

2 A fractal is a curve or geometric figure in which patterns infinitely recur at progressively smaller scales.

3 A lexicon is the vocabulary of a language, an individual speaker or group of speakers, or a subject.

4 Processing is a programming library developed by Casey Reas and Ben Fry for artists and designers.
Detail view of one set of modules.

Modules were designed to be tiled in any direction.
Emergence. Because emergence is a phenomenon seen in the natural world, I used modules with organic forms to conjure a sense of growth. The plant-like modules were designed by my classmate Jenni Oughton.

Fractal. In this design, I used geometric shapes and recursion to illustrate the infinite nature of fractals. The composition begins to take on an ornamental quality.
Lexicon. In this exploration, I collage forms together to create a visual lexicon.

Poster installation, along with the Processing program that generated the graphics.
Classmate and collaborator Zach Scheinfeld and I were commissioned to co-develop the brand identity and website for the 2023 RISD Grad Show, an annual exhibition for graduating Masters students held at the Rhode Island Convention Center. While the diverse graduate student body is typically presented as a collection of different departments, we wanted to highlight individual students while still representing the graduating class as a cohesive whole. We decided to take a data-driven approach, using basic demographic information and a survey with five prompts to glean insights into the RISD grad class’ experiences during their time at school.

The identity of the show was driven by the website, in which we literally interpret the idea of students being three-dimensional and multifaceted individuals by representing each student as a cube. Each face of the cube encodes the students’ survey responses, and users can explore the various sides of the cubes through dynamic interaction and motion design.

For the print applications, we drew on the geometric shapes used on the website to create vibrant visuals that reflect the creative spirit of RISD students. The lexicon of shapes forms a modular system that can be broken apart and reused in different configurations throughout the identity system. Bespoke glyphs, themselves composed of geometric shapes, complemented our primary typeface. These elements come together to form a whole that is greater than the sum of its parts, much like the RISD student body.

1. The questions were:
What tools and materials are most important to your practice?
During my time at RISD, three words I’ve been thinking about the most are...
What song would be on the soundtrack to your grad school experience?
What book, article, or piece of writing was most informative to your grad school experience?
After I graduate from RISD, I will remember this the most.
The RISD Grad Show 2023 homepage randomizes the order of student cubes as well as which face of the cube is displayed so that every visit to the website shows a different view of the student body. Visit the website at www.risdgrad.show.
The RISD graduate class of 2023 is working with filter displays the tools and materials most important to that student’s practice. The RISD graduate class of 2023 is thinking about filter reveals the ideas and concepts that the student has been thinking about most during their time at RISD. The RISD graduate class of 2023 is listening to filter shows the song that would be on the soundtrack to that student’s grad experience. The RISD graduate class of 2023 will remember filter shows the student’s response to the prompt, “After I graduate from RISD, I will remember this the most.”
The cubes dynamically turn in 3D space when navigating between filters.
We made a pattern generator, coded in Python, that created graphics based on our system of geometric shapes. The tool allowed us to vary parameters like width, height, and color so we could create graphics for a wide variety of applications.
↑ Print ad in Providence Monthly magazine.
→ Posters hung up around the RISD campus.
Wall vinyl installation at the Rhode Island Convention Center.
DANIEL LEFCOURT'S artistic practice engages the discipline of painting through the lens of scientific, industrial, and military imaging technologies. In his work, he investigates generative systems, chance, procedural design, and artificial intelligence. We talked about the metaphors of generativity and its legacy in abstract painting, the objectivity of making with algorithms, and what artificial intelligence might be to artists and designers in the future.

SERENA HO Your practice is very multifaceted in terms of the media you engage with. How do you see these diverse segments of your practice coalescing into a cohesive body of work?

DANIEL LEFCOURT They don't do that [laughs]. It doesn't coalesce ever… I actually make an effort not to go down that road. I try and think of it more as a constellation; my practice as an artist is like a constellation of points. What do you want to bring into that constellation of points, and what's outside of it? It's a moving constellation too.

Well, what is consistent in your work is engagement with technology and use of generative processes. How did you arrive at this way of working?

With the Terraform paintings [FIG. 2], I started looking at a lot of drone footage. If you go to my Are.na profile, you’ll see one channel called Terraform [FIG. 1], and you can see all the imagery that I was looking at around what’s called “remote sensing,” which is the discipline of measuring objects without making physical contact. Any type of spatial measurement that doesn’t involve touching is called remote sensing.

I like this term as a metaphor. It’s about our alienation from the physical, which I think we can all relate to. So, on the one hand, I was doing this very direct process of pouring paint and engaging physically with surfaces and materials. On the other hand, the
Allan McCollum applies the methodologies of mass production to handmade objects. He uses generative systems and typologies to create vast vocabularies of form. For example, in his 2006 Shapes Project, he produced a unique shape for every person on earth.

Algorithmic processes create a distancing effect from the surface. I would photograph the stained canvas then I’d bring that into Rhino Grasshopper, and then start running algorithms on them to produce the drawings. The drawings then get mapped directly back onto the painting itself.

If you picture the horizontal painting and the artist/painter hovering above the surface— I started thinking about that physical orientation as an analogy to the position of a satellite above a planet. I was thinking about world-building and about a kind of surveillance of the canvas space, and then thinking about the fantasy of military technology, of hovering above the earth and having this kind of all-knowing understanding of the planet itself. And that became a kind of central analogy in that work, of the hovering painter and the fantasy of domination and control. There is a kind of masculine fantasy built into both of those processes.

Yet you’re giving up control to the machine, at least as far as your own personal control.

...And to the chance of the drips—physical chance. A lot of them are blind...I have this big table that I can pour paint onto, and then just dip the canvas so it’s just totally blind. Yeah, so it’s playing with that chance and control. I’m thinking about those as generative systems as well. Generative systems don’t have to just be algorithmic systems.

What draws you to generative art?

That’s a good question. Within fine art, I’m coming to it through abstraction, and the history of abstraction. I studied under Alan McCollum; he was my thesis adviser as a graduate student.

In the “jos,” he’s coming up with generative systems, sets of variables that produce infinite combinations. He’s doing it in the context of minimalism and conceptual art, so it’s very different from design in a sense.

He’s thinking about generative systems as metaphor or analogy or allegory. He’s thinking about consumer culture, he’s thinking about mass production, and the relationship of mass production to fine arts and the relationship of mass production to formalist processes, abstraction, geometric abstraction, and all these histories.

It’s also like a real personal thing of...you’re trying to get away from yourself. You can’t make discoveries unless you get away from your own taste, your own tendencies, your own kind of preconceptions of what art is, of what artists do. As a middle class person, you have certain tastes, and you’re educated in a certain way—and so I saw in chance systems and abstraction a way to get away, a path away from my own preconceived ideas of quality.

You can’t make discoveries unless you get away from your own taste, your own tendencies, your own kind of preconceptions of what art is, of what artists do.
It’s interesting that you approach generativity from a place of distancing and objectivity. Do you feel like you lose a sense of personal authorship when you leave things to chance and the algorithm?

You’ve touched on like the heart of the anxiety of algorithmic art. So you come up with the system—how do you assess quality, the good versus the bad? Do you come back in and become an editor, an aesthetic taste editor of your own algorithm? Well, that’s one approach.

At times I do that, sure. But the other approach is somebody like Alan McCollum or an artist like Hanne Darboven where it’s an attempt to get away from aesthetics altogether, in which case you would not edit. It’s just about the system. That, to me, seems a more truthful form, true to the work itself, true to the medium, if we’re talking about art.

For design, that’s a different thing. Sometimes you’re just using generative systems to create new interesting formal discoveries, right? And that’s fine. It’s not a judgmental thing. If you have a problem to solve, it can be useful in that sense.

I wanted to shift the conversation to some of your Photoshop work with scripts and actions. What drew you to Photoshop as a generative tool?

I was trained as a painter, as a commercial artist from a young age. I learned painting pre-digital. Then Photoshop came along and it replaced that earlier world. If you look at the Photoshop brushes, I mean, the default brush is an airstream. It’s all a metaphor for these physical processes, and so I became totally fascinated with it.

I never thought about Photoshop in relation to generative systems until I saw Travess Smalley’s work, and then I was like, oh, yeah, that’s kind of brilliant. My associations were very different. There was Processing on the one hand, and there was Photoshop on the other, which is totally different. So I just started playing around with it, and started with the generative actions. The whole generative Photoshop actions project came out of teaching, and then the pandemic and having to switch to online. I just explored that and did a workshop one day with my students, where we just played with actions and tried to make some complex systems.

You make a lot of your tools accessible for free to the public. What about distributing your own tools is interesting to you?

This is another option for generative art. So we talked about designing aesthetically pleasing, tasteful systems for formal discovery, for commercial graphics, or something like that. We’ve talked about exploring systems for their metaphorical potential and artistic potential in and of themselves. And then this would be another, which is tool building. And that is a new thing for me, and I’m super interested in it.

This has actually led to specific jobs. I’m actually now advising some of these AI companies in tool building and I think it’s because they saw the plugin and all this AI stuff I’ve done over the years.
In what capacity are you advising them?

It’s this interesting moment because they’ve made all these toys, these incredible magic tools that generate images, and they don’t know anything about art. They don’t know anything about design.

I actually think there’s very limited use for sitting there and typing a prompt and getting out some random image. It’s a neat novelty trick, but how are we actually going to make this useful? I have a lot of ideas for how to do that.

You have made a lot of images using AI (FIGS. 8, 9). Do you think they can be appreciated for their own artistic merit, regardless of whether or not it was made with AI?

I’ve spent much of the summer and the fall really trying to think through what this is, this new tech. I’ve kind of broke it down into four levels, I would say.

In some ways it’s an extension of scrolling and browsing. You know, the kind of standard addictive behavior of Instagram or anything else where you’re just passing through image after image...It’s almost like a generative image browsing tool, not much more than that. That’s not creation. That’s just content, empty content.

So you generate, and you start browsing around, and you generate more. But then you maybe stick with the project, and you start making more and more images.

And maybe you’ve 100 variations into creating a certain set of images. And then you start to feel like you’ve made something, and it almost starts to feel like a drawing practice. And so something shifts. That shift from the browsing to the making is very subtle, and there’s no clear line there.

Then you keep going. You bring it into Photoshop and you’re combining it with other tools. Then it really just becomes another tool within your tool set of your creative practice. It starts to resemble more conventional artistic processes.\textsuperscript{6}

Right, it’s about the way it’s used and not necessarily about the technology itself. I know we are at time so I’ll let you go. Thank you so much for your time. This was really interesting and I definitely have a lot to think about!

Thank you, it was great meeting you and keep in touch.

\textsuperscript{6} The specter of AI completely automating the jobs of designers, illustrators, and other image makers is perhaps overblown. Creatives will figure out ways to capitalize on this technology to enhance their artistic process. That said, I can’t imagine these disciplines won’t have their casualties, though it is hard to predict what this will look like.
DENISE GONZALES CRISP is a graphic designer, writer, and educator who has been engaged in an ongoing research project on what she calls the DecoRational. In her writing “Toward a Definition of the DecoRational,” which helped inform my own views on ornament, she attempts “to engage the discourse of ornament with that of rational design.” In our conversation, we discussed how to reconcile meaning, ornament, rational systems, and technology in contemporary graphic design.

SERENA HO Your essay “Toward a Definition of the DecoRational” touches on a lot of the things that I’ve been thinking about lately. I’m interested in the collision of rational, systematic thinking and the world of the subjective, the patterned, and the ornamental.

DENISE GONZALES CRISP The nature of the decorative tends to be rooted in systems. There’s typically an overarching logic to it. I think, in particular, of Islamic pattern [FIG. 2]. But patterns from various cultures all have meaning. None of it is superfluous. It’s all communicative, for the most part.

How can the decorational be integral to communication rather than superfluous?

The way that I think that decoration can exist in graphic design is exactly through code, it is exactly through using the technologies that can create the details of communication. But we’re still very much a part of this modernist tradition, whether we like to think so or not. I’m actually a little dogged by that myself, because I very much appreciate the modern sensibility but I think you have to make a decision to not so much go against it, but to incorporate other things. So it’s really more your decision as a designer to give credence to [approaches outside of modernism] as potential expression.

And then that suggests—what is the value of ornament? What is the value of embellishment? And I actually don’t like that word embellishment, as I’m using it, because if it’s embellishment, it suggests that it’s added on versus being integral. So if we can believe in the idea that the decorative has cultural and social meaning and therefore significance, then you’re able to incorporate it in some way. It’s a knowledgeable decision coming off of postmodernism, because the principles are embedded a bit in postmodern thought—and that is that you don’t throw away all this history in order to create a new contemporary reality.

The decision of what makes our reality now is in part a product of some power somewhere that you could trace back to if you wanted to. [In using ornament] you’re bringing forward that which has been undervalued because of the hegemonic.⁴

But it’s also not postmodern because it’s not ironic. It’s actually taking ornament at face value, and trying to

1. The idea that pattern and ornament can—and should—contain meaning rather than just fill a surface, that it can unite the systematic, rational approach of Modernism and traditions of pattern and ornament, allowed me to find the connection between contemporary graphic design and the world of the ornamental.

2. See my discussion on Tiger Dingus’s concept of “epistemic disobedience” on page 15.

↑ FIG. 1 Calligraphy is a major motif in Islamic pattern. Language carries both philosophical and spiritual meaning as well as ornamental value.

↑ FIG. 2 A painted “quilt” by Denise, based on the Munsell color system.

↑FIG. 3 Calligraphy is a major motif in Islamic pattern. Language carries both philosophical and spiritual meaning as well as ornamental value.
give it its worth. So when I first started using the decorative, it was more about using an aesthetic and a language that had been dismissed.

You mentioned that pattern has meaning. Do you think pattern needs meaning to be integral?

No, my interest in using it is more about the DecoRational. So the rationality part of it. So what would be the principles that make it more rational? It’s not just about repetition. There’s something that we get from rational thought or critical thinking that leads us down that path, and it guides that path. There’s also a relationship to craft. If I was going to make a pattern using computation, then it couldn’t just be a replication of embroidery. It has to do what that technology can do. So to me that’s an important principle—that relationship to technologies. So not just replicating historical patterns, but subverting them in some way, or enhancing them with the new tools that we have.

Yeah, I think that’s an important part.

I wanted to talk about the idea of beauty. I think ornament is traditionally expected to be beautiful and appealing. Does the ornamental have to be beautiful?

There can be cacophonous pattern or cacophonous ornament. I think of someone like Antoni Gaudí. That’s not beautiful.

I’m also of the opinion that human beings are by definition binary. (I don’t mean that in an anti non-binary way). What I mean is, we’re two halves of a whole and we are on a center axis, and we see the world on that kind of axis, and therefore any kind of pattern is pleasing and satisfying because we are pattern seekers. So if you’re talking about some sort of repetition or some sort of pattern that goes into the ornament, then it has an automatic attraction. It’d be interesting to think about the degrees of so-called beautifulness, which, of course, is culturally bound.

And then looking at different cultures, this idea of repetition, of centering on something—for example, butterfly symmetry—it’s pretty much consistent throughout history, across all cultures. You’ve been looking at the DecoRational as a research topic for a while. What has changed over the years? What do you notice in our contemporary graphic design landscape in terms of how decoration is used and valued?

I would say it’s no more accepted than before. My students, they would always actually gravitate toward pattern because it fills space. And so I would actually have to fight them. Like, that’s too facile, you know, and anybody can do it. There’s no craft in it. It’s kind of like in...
the ‘80s when people put triangles on everything with drop shadows (FIG. 7). It looks nice, but it doesn’t contain meaning. So I usually try to steer them away from it. Or if you really want to do it, what’s your rationale for it?

Is it important for a viewer to understand the rationale? Do you think graphic designers have a responsibility to make it clear what the rationale behind a design is?

In order to provide that rationale, I would take the position of a craftsman. There’s just the joy of making it, and the skill in making it is evidence; the depth that you read from that evidence is unnecessary in a way.4 And so as a craftsperson, there is that element to what we do.

And also, by the way, let’s not forget the very thing that the modernists wanted to resist was crafts. Adolf Loos was arguing against the barbaric nature of decoration. Like people get tattoos, and [he thought] that was just barbaric. But also, in the 19th century, they were stamping out decorative goods like pennies, causing them to lose their value.

So, getting back to your question. I think it’s a lost idea but I still think it’s relevant.

The whole design industry is geared toward efficiency. You can’t make things like a craftsman does. You can’t customize everything because you’ll never make the money for the hours that you’re putting into it. A craftsman can because you pay a craftsman what they’re worth, or for the value of that artifact because of its beauty, because of the skill that went into it. But in graphic design, you have to make an asset out of expediency.

So that’s where coding would be really interesting to me; it’s inclusive of that expediency, and it’s generative. It reminds me of what’s happening with ChatGPT.

Do you consider work made with AI substanceless, if we’re talking about the idea of craft? Because none of that skill went into it at all.

I suppose if you’re using those things, you’d have to figure out, where’s the pinnacle of skill and discernment in this generative tool? So you’re not going to get it in the tool itself. AI is limited, and it relies on the abduction of human beings to do something with it, with their intuition.

So I was in a conversation recently with my friend and we were talking about how ChatGPT can write an essay now. And there’s frankly no way you can stop students from doing it because it’s almost impossible to detect. And he’s like, well, yeah, so we have to change how we teach writing. Rather than writing the bazillionth essay about, you know, the Civil War and Abraham Lincoln, you’d write a prompt and generate an essay first, and then the real writing would come in your analysis of the essay and its veracity. One of the things about the computation is that it has to naturally change how we think about crafting.

That’s really interesting. Denise, I know we have to wrap up so thank you for your time again. It’s been a pleasure talking to you.

You too, take care, bye.

One of the things about the computation is that it has to naturally change how we think about crafting.
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PHENOMENAL VIEW OF REALITY

UNMEASURABLE (ETHEREAL)

CROSSOVER

MEASURABLE (CONCRETE)