Unite 2_WrittenWork
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Summary

What is the relationship between nature and human beings? Does human society share a connection with the natural environment? Through this unit's project, I aim to explore the mutual interaction and reflection between the two, in order to reveal the intrinsic links between human and nature, and between the natural and the artificial. Continuing this line of inquiry, I turn my attention to human culture itself—its development relies on natural laws, while cultural rules can also be regarded as an extension of nature's generative logic.

In the first project, I explored the evolution of plant language, focusing on a specific cellular protein that constitutes one eleventh of plant pheromones. Based on its role in guiding the plant's life cycle and behavioral logic, I visualized the basic informational diagram of this single protein cell. Drawing from actual plant behaviors, I further derived and visualized infinitely varied diagrammatic expressions from this foundational structure. Through this process, I propose that language is not exclusive to humans—plants, too, possess complex and beautiful linguistic systems. Whether human or plant, all forms of language are, in essence, manifestations of information. Their differentiation and evolution arise from the same fundamental process of informational transformation. From the perspective of plants, this project seeks to challenge the exclusivity of language and reveal language as an extension of natural information expression—its evolution woven through all forms of life.

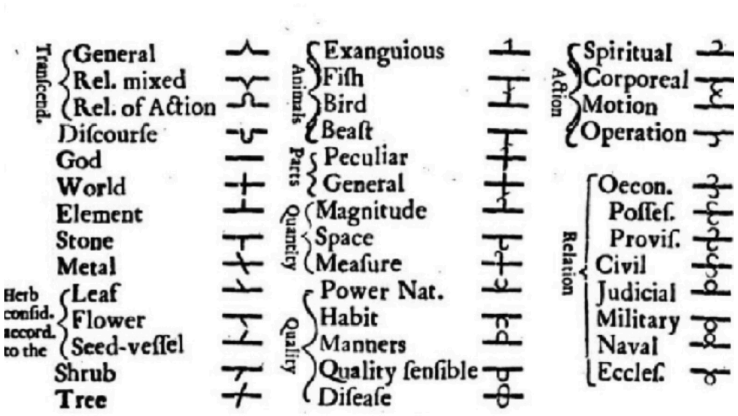
In the second project, I developed a generative code system modeled on cellular evolution, built upon bionic logic and the evolutionary processes of memory. Extending this logic to the realm of human memory, I investigate how memories are imagined, filtered, preserved, and forgotten through the passage of time. In the later stage of the research, I shifted the focus from individual memory to collective memory within social and cultural contexts. Using one hundred historical reinterpretations of "creation stories" as archaeological materials, I attempted to reorganize their internal structures through the logic of biological code—guiding the cutting and reconstruction of paper as an act analogous to nature's revision and overwriting of memory. In this process, the original biblical texts gradually become blurred and disordered, allowing the entropy and transformation of memory to emerge and become traceable. Through this, I suggest that whether it is the birth and death of cells or the reconstruction of memory, both are driven by the same generative logic that sustains the operation of nature.

Through these two projects, I examine the internal connections between natural and artificial systems from the dual perspectives of "nature observing humanity" and "humanity observing nature," seeking to uncover the shared structures between the language of nature and the natural laws embedded within human society.

I
129 Variations of 1/11 Plant's Language

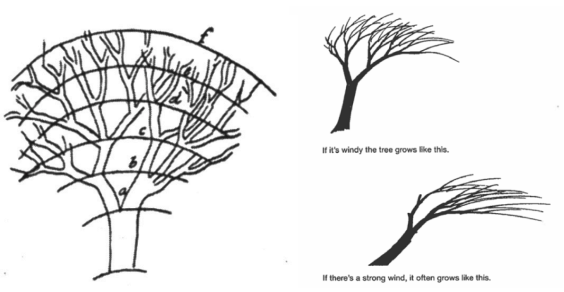
Languages are symbols, they are the information which be given. And information can be anything. This project explores the evolving visual language of plants, inspired by the account of research on plant vision in What a Plant Knows: A Field Guide to the Senses[1], and focusing on 1/11 of the plant "visual" language - Phytochrome B[2]. It demonstrates the nearly infinite and diverse possibilities inherent in the differentiation and development of a single fundamental plant-language symbol.

At the beginning of this project, my central objective has been to convey the idea that language is information—that all linguistic forms, no matter how different they appear, originate from a unified system of knowledge. This exploration began with a methodological reference to John Wilkins' An Essay Towards a Real Character and a Philosophical Language (1668). This seventeenth-century work attempted to construct a universal symbolic language capable of encoding all human understanding, aiming to transcend boundaries and facilitate the exchange of information. Notably, Wilkins employed only extremely simple basic shapes which, through diverse combinations, generated thousands of symbolic characters. This approach reflects the coding logic I used: deriving complex and infinite formal possibilities from a single foundational element.



1.What a Plant Knows: A Field Guide to the Senses
In the book, the author explores, from a compelling yet rigorous perspective, how plants perceive the world—including touch, hearing, smell, sight, and even memory, from the colors they see to the rhythms they follow. He draws analogies between plant perception and human senses, offering a unique perspective that encourages us to consider whether plants are also aware of their surrounding environment.
My concept is derived from the visual section of the book, and it explores one eleventh of a particular visual language within it.

2.Phytochrome B
Photoreceptors regulate different physiological processes in plants—telling them when to germinate, bend toward light, flower, sense night, detect dim light, or track time. Both we and plants can perceive light, but at the level of perception, plants' "vision" is far more complex than human vision. Just as our four photoreceptors allow our brains to perceive images, interpret environmental changes, and respond accordingly, plants can convert light signals into various growth-regulating instructions through at least eleven types of photoreceptors. My project focuses on one of these photoreceptor, Phytochrome B, whose primary function is to regulate diffuse growth in plants, a mechanism that resonates with the differentiation and diffusion of language in my project.



Building upon this foundation, and within my concurrent exploration of plant behavioral languages, I drew reference from Leonardo da Vinci's Draw a Tree, which poetically and narratively explores the differentiated forms of a tree under various environmental conditions. Unlike conventional scientific works, its narrative approach shifts the focus from purely rational analysis to a more imagination on life and the individuality of living forms. For instance, the temporal logic of watching a tree slowly grow and transform—accompanied by narrative text rather than dry, intricate diagrams—creates a more immersive and affective experience. Additionally, I drew inspiration from the book's analytical method of layering a tree's structure, adopting the stages of a plant's visual function as a framework for stratification, and used this logic to create a foundational information chart.

In the subsequent iterations of the project, I concentrated my focus on a single word — "Language." This became the point from which an infinite complexity began to unfold. Following a dictionary-style deconstruction of its meanings, I broke "Language" down into three concepts within plant thinking: "synchronization," "extension," and "development." I then dove into each of these notions, exploring the countless expressive traits plants display in response to them — suddenly, it all seemed infinite. Perec's Think, Classify (1985) echoes a similar critical perspective: given the complex standards by which we classify information, assigned by a fixed code or logic to the entirety of the world appears nearly impossible (Perec, 1985, p.186). The book also questions how we understand and classify vocabulary — for instance, in the case of synonyms: they are alike, yet never fully the same. So how can we distinguish between them? This led me to consider two directions:

1) In the case of the three meanings derived from "Language" in plant languages — "synchronization," "extension," and "development" — which aspects share common traits that might accurately express the word "Language"? In practice, I also attempted to emphasize a particular type of plant behavior in order to highlight the shared qualities I intended to translate from the original word.
2) Alternatively, perhaps "language" is inherently a word of infinite meanings — one that is ambiguous, unreadable, "taking us back to that original burbling in which we can with difficulty make out what might be called the readable" (Perec, 1985, p.186).

At the same time, it can be rich and open- ended. For example, Perec mentions a dozen different words describing the various states between water and ice. I believe this second direction also speaks to the core of my project, even as it challenges my initial desire to encode and translate information into a unified symbolic language. Based on the differentiation and enumeration above, I carried out iterations of the patterns. For example, using the same basic shape, I derived different plant parts based on the three outlined meanings (and the distinct movement logics that stem from them). Even when a single shape forms the same plant part, the resulting pattern can be entirely different. Through this process, I arrived at nearly a hundred variations. For the method of classification and presentation, I found inspiration in the reference book Draw a Tree , which organizes elements according to a temporal growth dimension: seed, root/stem, leaf, flower. Following this, I arranged everything in that order.

In Think, Classify (1985), there is a reflection on modes of classification, presentation, and understanding: "The products must be offered to visitors in a logical sequence,... and their classification must answer to a simple, clear and precise conception bearing its own philosophy and justification within it, so that the overall idea may be easily grasped." (p.188) In the context of my project, this logical structure might be the differentiation of cells and language: in the process of plant growth, cells continuously divide—from seed to flower; and within the various stages of growth, responses to different semantic orientations shift into different patterns. In this growth, semantics always blurred and intertwined. "Sei Shonagon does not classify, she enumerates and then starts again. A particular topic prompts a list, of simple statements or anecdotes. Later on, an almost identical topic will produce another list, and so on. In this way we end up with series that can be regrouped." (p.193)

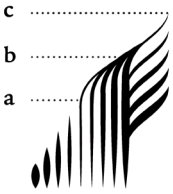


Chart drawn from 1/11 of the plant's language
X axis: Time; Y axis: Height

a. Underground Vision —— Hypocotyl
Under the soil, in darkness, plants grow vertically from seeds. The faster and longer they stretch, the more slender their bodies become.

b. Emergence Vision —— Seedling
The height elongation gradually stops, and the body begins to stretch itself, becoming thicker and shorter.

c. Expansion Vision —— Leaf
The weaker the light, the taller and slimmer the plant grows; the stronger the light, the shorter and stronger it becomes.

In another reference, Exercises in Style, the author recounts the same story in 99 different styles, showing how variations in tone, slang, gender, personality, and perspective can generate entirely new interpretations and meanings. "The more I go into each variation, the more I see in it."(p.15) This demonstrates the possibilities of language or grammar—how, once personal stance is introduced, language can undergo iteration and transformation through different combinations, perspectives, structures, and styles. This idea inspired the design approach of my project: through continuous iterations and variations, I aim to refine and delve into different layers of meaning and perspective, translate the same word 'language'. and explore what unexpected outcomes these accumulations and iterations might bring to the original word "Language." As the author mentions, he felt as if he were trying to destroy literature—though that was not his intention. Similarly, in the development of my project, the continuous process of translation seems that variations and stylistic transformations of a single form ultimately reveal the infinite possibilities embedded within language and the words "Language" itself.

Moreover, in Adhocism: The Case for Improvisation , a common mode of iteration is discussed: all creation relies on the modification and recombination of what already exists, and virtually anything can be combined to produce something new, as long as there is a necessary connection. This logic of iteration—such as the differentiation that occurs under certain conditions like the survival laws of plants—is also the logic I follow. Based on real botanical information, I use the interplay of different visual languages of plants (each possessing a certain purpose related to survival) to reorganize various behavioral logics, thereby generating a series of new iterative results. And these outcomes naturally exhibit a morphological convergence with forms found in nature. At the same time, as the text suggests, this process of iteration also involves a degree of morphological continuity, composed of gradual, incremental changes rather than abrupt leaps.The continuity of these transformations renders the process traceable, with all iterations ultimately stemming from a simple initial input — highlighting my interpretation of linguistic divergence.

Chart of the 1//11 plant languages serve as the basic units, upon which, following the plant life cycle and behavioral logic, I constructed fundamental visual rules and gradually derived a series of visual variations.





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II
Memory's Code

On the basis of a subversive rethinking of the function of code, I focused on the study of Conway's Game of Life[1], a code grounded in biomimetic principles, and gradually extended it to the mechanisms of memory revision and evolution in the human brain.

1.Conway's Game of Life
Cellular Automata are a class of biomimetic, discrete computational systems that have been applied in fields such as physics, theoretical biology, and microscopic structure modeling. As a typical extension of such systems in code, Game of Life was proposed in 1970 by mathematician John Conway. Its code essentially simulates the birth, survival, and death of cells by setting simple rules on a two-dimensional grid. Each cell can be either "alive" or "dead," and its next state depends on the number of living neighboring cells. Despite the simplicity of the rules, repeated iterations generate complex and unexpected patterns, demonstrating how local interactions can give rise to overall complex behavior.

1) Conditional Framework of a Book

Based on the interest in content construction, particularly with the book as a primary medium, I have always sought a new perspective on how content might be structured—specifically, by adopting a design methodology that is oriented around frameworks and tailored to the nature of the content itself, in place of purely subjective aesthetics.

In the book Conditional Design Workbook, the authors discuss this approach to framework-based creation, stating that "art is the idea of producing art." which means the emphasis of artistic creation lies not in the meticulous refinement of visual details, but in the construction of overarching concepts and rules. The focus shifts toward developing a systematic, rule-based framework centered on ideation and expression, thereby replacing subjective control. Through such generative frameworks, a continuous and fluid body of content—both visual and textual—can be produced.

Until now, the books I have created have consistently attempted to use this approach as a visual framework for content. In this project, I introduce code into book design—utilizing a generative tool governed by conceptual rules to produce a large volume of visual outcomes with internal continuity. Meanwhile, i think the selection of generative rules should derive from external principles that explore the essence of things. I always hope this could be biological—evolutionary in nature—so that concepts may manifest organically through natural processes.

As William Carlos Williams wrote: "Not to copy the nature, to imitate." That is, the beauty of nature lies not in its surface appearance but in its processes of generation and construction—its underlying structures and rules.

In this project, a cognitive concept of memory said: "We do not usually construct meaning through conscious computation, but computation and reasoning have already been encoded in our genes through evolutionary selection." Therefore, I chose to base my code on cellular automata—a natural evolutionary model proposed by mathematicians in the 1940s—where, under certain conditions, cells "survive" while others are "eliminated" and die out. At the same time, I introduce the evolution of memory over time: I label conflicting memory fragments as "revisions" and supporting fragments as "explanations." These fragments interact within the code—reinforcing or canceling each other out. Over time, memories emerge and are replaced, allowing them to interact and be reconstructed within a natural framework.

Meanwhile, addressing the issue of uncontrollability in generative systems of computation and prediction, Conditional Design Workbook also suggests that such frameworks should not turn into unintelligible puzzles; instead, they should be pre-communicated by the designer during setup. That is, within the computational and unpredictable nature of code, the advantage of adaptability to artistic expression should be preserved, while also disrupting its opposites. In my project, this results in a reversal of code as a purely rational tool. I retain its predictive logic, but allow it to interact with human emotional and narrative expression. Within the structure of this framework, a more readable and humanly comprehensible form of narrative—rather than purely computational output—is generated.

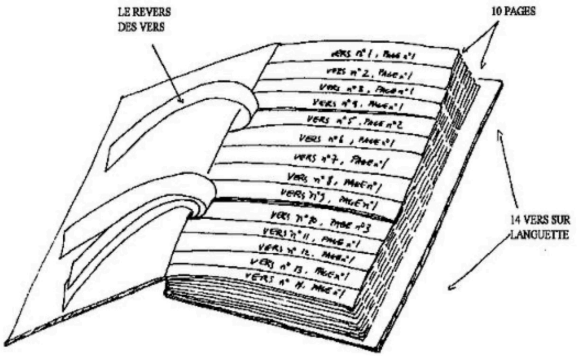
2) Code-generative Literature

Cent mille milliards de poèmes, published in 1961 by French writer Raymond Queneau, is an experimental poetry book and one of the representative works of the Oulipo literary group. By deconstructing the compositional rules of the sonnet, Queneau printed each verse on a separate flippable strip, enabling readers to generate and read up to one hundred trillion different poems through rearrangement, combination, and substitution of lines. This book seeks to merge rule-based experimental programming and writing with the material medium of the book, in a way that closely aligns with my research direction.

As a work of Oulipo literary experimentation, it exemplifies the group's tendency to introduce uncontrollable and unpredictable elements through the formulation of algorithms and constraints. It is seen as an experimental process that tests—or even completely dismantles—the literary essence it explores: the complete suppression of the editorial identity behind a text, whereby countless philosophical and poetic texts are generated solely through programming.

In the early experimental phase of my project, I also encoded similar sentence-generating systems. However, through practical application, I realized that the actual meaning and content produced still directly depend on the selection, compilation, and literary nature of the word bank and grammatical structure (otherwise, the result tends to resemble nonsensical automated headlines). This highlights the close entanglement between content and authorial identity. Although this seems contrary to the original intention of Oulipo, the conceptual rules remain applicable to structural organization of the content. In the subsequent stages of practice, I chose to retain the authorial identity by inputting the code system with paragraphs rather than individual words, while still preserving the system's generative constraints. This allowed for the creation of coherent, narratively driven texts that genuinely originated from my editorial position. The overall layout, generated through a rule-based system, makes the content retain its unpredictability and boundlessness, thus achieving a relative balance between generativity and human intervention, unpredictability and subjective expression. Nevertheless, I continue to reflect on the implications of text within the context of the conceptual book as a material object— particularly as my final outcomes resulted in a large volume of narrative texts that require the reader's participation.

When readers do not engage in close reading, how can the book itself—through its materiality, spatiality, and interactivity—allow them to directly perceive the expression of its underlying concept? If we consider only visual communication, does the narrative quality of the text still matter?



In Cent mille milliards de poèmes, the nearly infinite possibilities of flipping and recombining lines reveal the boundlessness of literature. The designer designed the flipping action, which closely matches the concept of the text: without engaging in actual reading, one can intuitively sense and experience the concept through the act of flipping. At the same time, the book's physical structure and craftsmanship serve as a visualized model of code logic, materializing abstract systems of rules through physical form. In my project, the rule-based system based on biological evolution — and the visual characteristics of code as both fragmented and continuous — reminded me of worm-eaten perforations in old books, where the passage of time physically alters and erases information through the materiality of its medium. It also responds to the evolution of memory over time, as the brain, being its vessel, continuously reshapes it through its inherent imagination and subjectivity. Moreover, the hollows and interwoven layers, beyond visualizing and modeling biological rules, introduce a sense of fragmentation and stratification into the reading process, resonating with the conceptual framework.



3) Memory as a Material — The third Memory

When reflecting on how to integrate the ever-evolving cellular life code I created with the characteristics of the book as a medium—and to situate them within a more resonant context, I turned toward the generation and reconstruction of human memory as a new line of inquiry. Memory itself can be regarded as an abstract computational system, one that in many ways echoes the generative logic of biological code. This underlying evolutionary principle is encoded within our genes, while the brain, as its vessel, continually reshapes memory through processes of internal imagination and subjective modification. Over time, the materiality of memory transforms, evolving continuously with the passage of time.

In the film The Third Memory , the transformation of personal memory through the merging of external sources becomes even more apparent. At the same time, the work also emphasizes the importance of incorporating the memory-bearing individual as a metacognitive agent into the material construction of personalized memory-based material. The memory presented in the film is composed of three sources: the perpetrator's own recollection of the robbery event, the relatively objective live television broadcast, and the highly narrative and fictionalized cinematic representation. These sources intertwine and, through the perpetrator's retelling, give rise to a third, hybrid form of memory. This personalized and blended narrative outcome reveals the very mechanism of memory itself—the formation of composite memory.

At the same time, it also led me to further explore the theory of "embodied, embedded, enacted, and extended cognition", which conceives memory as the result of interactions between internal and external sources of information.

In W, or the Memory of Childhood, Georges Perec attempts to reconstruct his missing childhood memories. The book is composed of two parallel narrative strands—fiction and autobiography. These two channels intertwine: a highly abstract fictional narrative and a few remaining fragments of personal memoirs. Together, they complement one another and form a "third memory"—a final, composite form of remembrance. Through writing, Perec extends his memory process into the text itself. He pieces together fragmented memories from different sources, which either reinforce or contradict each other, forming a reconstructed version of his childhood.

This formed the foundational rule of my memory- based code: over time, conflicting memory fragments are reconciled, supportive ones are inferred as "true," and the author's present interpretation of past events is integrated into the process. Memory is not preservative, but generative. The original memory no longer exists; it relies on the individual's act of piecing together, inferring, and imagining fragments of the past. I aim to make this process visible and replayable within my project.



4) How Memory Becomes Narrative

"Given enough time, our well-argued convictions begin to falter; our certainties become fantasies." This ongoing revision of fragmented memories over time reminds me of the literary concept of the unreliable narrator. Through a narrative strategy that introduces paradoxes, the text continuously withdraws or negates previously established facts, creating an unstable and ever-shifting mode of storytelling. If we extract the text from its narrative structure and attempt to reconstruct it in chronological order, would the unfolding of discourse—by means of its own denials—erase the events it had once narrated? There is no recoverable memory, only an undifferentiated collection of past time. In this framework, the discourse of the work may be fixed, but its story remains fundamentally indeterminate.

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Essaying

Human and non-human, environment and technology—together, they reshape us. Posthumanism challenges long-held exceptiona and separations: between humans and nature, nature and the artificial, by exploring new modes of existence, cognition, and behavior.

In these non-human, collective patterns of nature, what speaks for nature itself? Through the formation mechanism of a striking vertebrate skin pattern, a continuous reaction-diffusion rule was uncovered. This is an abstract computational system—mirroring the very process of biological evolution. Such latent rules are encoded into our genes—a shuttle-diffusion cognitive system. Like the neuronal avalanches in the upper layers of the cortex, triggered by stimulation of cognitive receptors.

Memory is an ongoing cognitive reconstruction. It is a cumulative system, woven from fragments of perception sourced from different origins, a dynamic interplay of information. Its generation and reshaping are never about preservation. The brain serves as its container. Imagination and subjectivity guide the continual transformation of memory—perforations and entanglements. Primal memories are gnawed away, while blanks are filled by the present. Over time, the material memory is reshaped—its morphology evolving through time.

Reality and virtuality, human and non-human, environment and technology—interdependent. In 1950, mathematicians proposed an evolutionary model showing how some cells would "survive" while others would "die" over time. I've embedded human emotional interaction into this system, with language as its medium. They become a traceable, iterative process of revision. "Touring your memory", in this simulated evolutionary model, memories from disparate origins are marked—some as mutually exclusive, others as symbiotic. They are revised and reassembled within a natural order. A more legible, more narrativized form of prediction is being generated.

Dialogue

Through subsequent discussions, I realized that the logic of the code, to some extent, hindered the audience's understanding of the work. Some feedback suggested that the organic quality of the project could already be felt through the traces of the wormholes and the text alone. Therefore, I began to reduce the visible presence of the code, allowing it to operate as an underlying logic instead. The layered and spatial qualities of the wormholes now serve as a metaphor for the generation and flow of memory, allowing the evolution of the text to be more naturally driven by these "voids of memory."

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II
Memory's Entropy



Humans and non-humans, the environment and technology — together, they have reshaped us. Nature is embedded within human society, influencing and shaping our cognition and behavioral patterns. Whether it is the birth and death of cells or the reconstruction of memory, they are all driven by the same underlying logic, maintaining the operation of nature through processes of evolution, generation, and reorganization. By exploring the natural logic that lies latent within human society, I attempt to reflect upon and reveal the intrinsic connections between the human and the natural, and between the natural and the artificial.

At the initial stage of the project, I adopted code as a generative medium and, based on bionic logic, developed a generative code system that simulates the evolutionary process of life and memory. I extended this logic into the domain of human memory to explore how, under the linear passage of time, we imagine, filter, retain, or forget memories. The project focuses on the plasticity of human memory as it unfolds through subjective reconstruction and progressive layering, allowing its process of evolution to remain both iterative and traceable within the work.

As the research deepened, I gradually narrowed the focus of the discussion on memory to the realm of collective human memory, selecting creation myths—texts rich with imagery of the genesis of all things and the evolution of memory—as the "ancient material" that introduces the memory code system. As a metatext, its meaning has always remained in a state of evolutionary ambiguity. Through continuous retelling and reinterpretation over time, creation myths have ceased to belong to individuals and have instead become iterations of collective memory—questioned, revised, replaced, imagined, and reshaped—mirroring the principle of my memory evolution code.

In exploring the relationship between the artificial and the natural, I also turned to the practices of artists Sterling Ruby and Masaomi Yasunaga. Both reshape ceramics by engaging the material properties of artificial media and the actions of nature. "It's like a big bowl or ashtray filled with all the fragments of the past." Sterling Ruby and Masaomi Yasunaga's sculptures articulate a dialogue on fragments, memory, and history. They collect ceramic shards from the past, regarding them as traces and witnesses of time, and compress, fuse, and remold these past failures into new forms—transforming "recollection" into "the present." This transformation from material to memory is, to me, the most subtle and compelling aspect of their work.

In terms of material use, they condense memory through the "flame" of firing. They describe the kiln as a time machine, and fire as the medium of transformation for these fragments. Through the act of firing ceramics, they emphasize the participation of natural forces—relinquishing control over form to the flame that solidifies it, and to gravity that reverses it during melting. Sterling Ruby and Masaomi Yasunaga draw upon the emotional resonance embedded in the act of firing itself, integrating it into the resulting work. The natural agency inherent in the process and time becomes the means of generation. Throughout, they incorporate the shaping forces of all these processes, emphasizing how man-made historical fragments are filtered and reversed by nature during transformation. They closely examine the medium of their creation, using fire both as a means of visualizing evolutionary flow and as a force that crystallizes emotion and value within memory—obliterating the material body of fragments to let them become the present of memory.

While Ruby and Yasunaga work through clay and fire, my own practice turns to a different medium—book. Beyond serving as a visual model for my code, the book's particular capacities for documentation and revision enabled me to present the concept in the mode of unreliable narration—a regime in which materials, through continuous questioning, modification, and reshaping, give rise to a narrative structure that is itself precarious.

Moreover, I explicitly incorporate the book medium's own impact on narrative. The layering of pages becomes a method for compressing and visualizing collective memory, in which time ceases to be merely linear and instead becomes stratified: I lay out multiple versions of a story from antiquity to the present in sequence to reveal how present cognition is constituted by the micro-level immediacy of lived experience and the macro-scale continuity of collective memory—a history that is overlapping and co-constructed. The book's very read-ability—its capacity to be flipped through—makes the tracing of this evolving memory possible.

Meanwhile, outside the context of textual reading, I attempt to let the book's spatial and material qualities function as narrative themselves. As Rock (2009) argues in Fuck Content, the way form is handled is itself a kind of text. In parallel with the practices of Sterling Ruby and Masaomi Yasunaga—whose works, though devoid of words or explicit interpretation, nevertheless speak loudly and quietly through their negotiation of the artificial and the natural—such material treatment generates countless associative and philosophical readings. Likewise, the book as a sculptural or spatial artifact should not merely convey information precisely but should exceed our grasp: "Artifacts become truly transformative by exceeding what was expected of them, exceeding our grasp. It is precisely in challenging us—triggering the potential of new ways of seeing, thinking, grasping, and acting—that design plays its role in redefining the human" (Colomina and Wigley, 2016, p. 17).

Another aspect, in appearance, both their works and mine attempt, through different processes, to bring nature into the realm of the artificial—allowing natural forces to intervene in shaping a state of controlled chaos that invites reflection on the human–nature relationship. Yet in terms of medium, Sterling Ruby and Masaomi Yasunaga rely on the real physical agency of nature to intervene in the artificial, highlighting its transformative power. In contrast, my project simulates a natural transformation through the generative logic of life code and the cutting of book pages. The vitality that emerges naturally blurs the boundaries between the artificial, the natural, the environmental, and the technological.

Finally, in our shared discussions on the relationship between humans and nonhumans, both their practice and mine introduce and transform elements of memory and historical material. "The posthumanist framework not only requires a rethinking of the human–nature relationship but also demands a critical awareness of historical and ongoing human issues."Its discussion aims to deconstruct the original definition of "the human." Its content not only includes a greater range of nonhuman entities but may also encompass human cultures throughout history. It reveals the long-term process through which humanity continuously reshapes itself—an iteration of thought that reflects humanity's evolutionary adaptation to the world, while also exposing the possibilities of how things in nature occur, transform, and coexist. At the same time, by shifting toward such a more macro perspective, design research enables a more rational analysis of facts, interrelations, and systems, as well as speculative insights that reshape the way we think about them.

In this context, the works of Sterling Ruby and Masaomi Yasunaga can also be regarded as a form of archaeological practice, exploring how matter retains its traces and mnemonic forms over time. In their selection and treatment of "ancient materials," they melt and reconstruct them, , preserving not only the physical traces of these materials but also the memories they embody. Their reconstruction is not an absolute transformation but an evolution—a record of matter's change through time. They focus on the act of transformation itself, retaining the memory of previous forms and their inherent necessity of change. By accepting their precarious outcomes, they expose the entropy inherent in material evolution. This intense disorder compels the viewer to reconsider what disappears and what remains within transformation—a concern that parallels my exploration of the evolution and entropy of memory.

At the same time, Sterling Ruby and Masaomi Yasunaga offer a new direction for my research—one centered on the significance of reintroducing fragments that have been buried or discarded, a process they call "rescue". The remolding of these failed objects is not merely an act of "rebirth," but a materialization of evolution and circulation into powerful spiritual totems. Just as an artist once fused human ashes into porcelain to create beautiful white ceramics, their work oscillates between life and death, retention and loss, evolution and rebirth.

This also points toward new directions: perhaps this evolutionary archaeology of memory is not only about increasingly complex and chaotic entropy, but also about human differences and questioning within natural evolution. Nature renders all things transient, nothing lasting forever. "Nor is it about the unevenness of such apparent progress with countless different directions, gaps, reversals, and loss of capacities. Rather, it is the history of a question mark" (Colomina and Wigley, 2016, p.25).



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