# Accessibility to Possibilities

Discover the unknown unknown worlds

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Yutong Shen

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A thesis presented in partial fulfillment of the requirements for the degree Master of Industrial Design the Department of Industrial Design of the Rhode Island School of Design, Providence, Rhode Island.
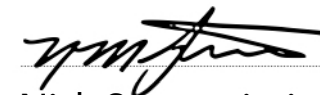
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## Essay

## Journey

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# Accessibility to Possibilities

## Abstract

The digital revolution has transformed the world, and today we are drowning in information. We use search engines as an efficient way to access information, and when we search, by connecting, relating, or random recommending, our knowledge network expands from the keyword we put in. With this search engine model, it's easy for us to find what we know we don't know. But it's hard to access things we don't know we don't know. In other words, our past limits our accessibility to information.

In this essay, I attempt to find an alternative way of approaching information in the design process through constructing accessibility to all kinds of possibilities. I propose that we generate knowledge instead of search for it — design in a way where innovation and willingness are not trapped by the past, and allow more people to participate and have fun in the design process. Thus, we can integrate the design process into daily life and, ultimately, build a decentralized design ecosystem for society.

Key words: accessibility, the future of design, computational thinking, generate design, decentralized design system.

## Introduction

Design today is less about ideas, and more about information. More than ever we are addressing the logic, the method, the theory behind the design by applying new design methods that emerged with data technology such as data-driven1 decision making, computational thinking, and generative design that empowers the traditional design process  and makes it more accurate. However, even with those supports, many designs in the market fail to meet users' needs. The problem[1] here is not the methods. It is us, the designers. We research, we learn, we analyze … We make every effort to understand our users and mold our understanding into a design. But we have overlooked two points:

1. We can never do research perfectly or fully understand others.
2. The design process is subjective, and the results of our designs are always biased.

Therefore, we are now putting more emphasis on mass customization[2] progress, which allows users to have more choices and the right to change products meeting their variable needs at a low cost. The rapid development of 3D printing is a sign. When pushing mass customization to the extreme, users in the future will have the full freedom of personalization for every product. In this time, when the users have the ability to fully customize products, everyone becomes a designer; there will be, then, no designers. Design becomes decentralized. The power of design delivered to every

person. We all have the chance to express what kind of product we want and to design it. We together form a blockchain system of design.

## Accessibility

Ideally, the more efficient way to design is to let those who are already experiencing under that scenario design things for themselves. The elderly design products for the elderly, disabled people design products for the disabled. Children design products for their peers. The flaw here is obvious: not every user group has the ability to design. That's why we have designers here.

Designers are the linkers that transfer users' needs to practical products. Their existence is because users do not have the ability and knowledge to access the solutions by themselves. The designer's job is to enhance accessibility[3], to empower every person to achieve more, regardless of their ability. Rather than saying that the products designed by the designer improve accessibility, it is better to say the designer himself is the accessibility. Thus, an essential way to solve problems is not continuing to design better products to assist users but to improve users' accessibility to solutions. If users can design their products regardless of their ability, everyone can have the most suitable product, and every need will be valued, regardless of the market. Product design will no longer be based on designers' speculation but on the positive result the users give. In the past, we've designed transportation, the Internet,

1. "… analytics can be useless, even harmful, unless employees can incorporate that data into complex decision making."
Good data won't guarantee good decisions
Shvetank Shah , Andrew Horne and Jaime Capella 2012

2. Mass Customization Definition
Maya E.Dollarhide  2019

Mass Customization Is The Future Of Products
J. P. Gownder 2011

3. "Accessibility: Empower every person and every organization on the planet to achieve more"
Microsoft accessibility training course

"The ultimate goal of the accessibility movement is to ensure that everyone, regardless of ability or disability, has the equal chance to participate in society."
Accessible technology in the 21st century

cellphones; we've designed various products to enhance accessibility. In the future, we'll design the way that allows each person to achieve more by themselves—we'll design accessibility.

In this era of information explosion, "search" is an efficient way to access knowledge and answers that we might not get from personal experience. Though it is efficient, it has limitations—the limits of our existing knowledge and the limits of the search pool. When we search for an answer, we suppose we are asking the right question and assume the answer exists. Under this model of searching, we can find what we know we don't know, but it's hard to access things we don't know we don't know[4]. We always feed into this with the pre-approved results, which becomes a big question[5]. Our thoughts are shaped and constrained by what we search for and what we get. That's why it's hard for us to jump outside of the box.

Possibilities

To find an alternative way of accessing information, "Generate instead of search" becomes the core idea of my thesis experiments. Rather than finding an answer in an existing knowledge pool, generative design[6] allows us to explore far more possibilities. The Library of Babel[7] explains this idea well: a random and infinite combination of the letters, building up a library that contains every possible book. If we can find basic rules to represent our world, through generation we can have access to every possibility, regardless of our existing knowledge, one's class, region,

4. Unknown unknowns
Joseph Luft, Harrington Ingham 1955
Donald Rumsfeld 2002

5. "We are being steered toward a future where we will not have control over search results at all."
We Need to Talk About Search | The Corbett Report
James Corbett 2019

6. Generative Design Example
https://www.youtube.com/watch?v=CtYRfMzmWFU
Autodesk  2016

7. "a version of a universal library, containing books with every possible combination of 410 pages of letters, thus containing every book that ever has been and every book that ever could be written, drowned out by an immense quantity of nonsense."
Jorge Luis Borges, *The Library of Babel, 1941*

or race. Everyone has equal access to information. By applying the generation idea in design, everyone has equal access to creative ideas and solutions. The future of everyone becoming a designer comes to fruition. This is not only the case in the design field. Communication between all disciplines will become more fluid because we are no longer limited by existing knowledge. We can think without trapping by our past.

Application

Human brain is designed to be "brilliantly uncreative" (Edward de Bono[8]). Because thinking is a high-energy activity[9], due to the design of our body, when we think, we try to think as short as possible to save energy. The same idea applies in design — that we tend to rely on familiar assumptions and existing routines. This explains why people usually get sucked into the cognitive inertia and why creative ideas are rare. Therefore, if we want to maintain creativity at all times, then we need access the creativity in a way that does not expend much energy*. For example, cooperating with machines.

The ultimate goal of design is to make us unaware of the existence of design.[10] By cooperating with machines, just as we don't need to understand the mechanism of a car to drive it, perhaps in the future[11] we won't need to know anything about design methods. But design still happens spontaneously in our daily lives, generating personalized products for us.

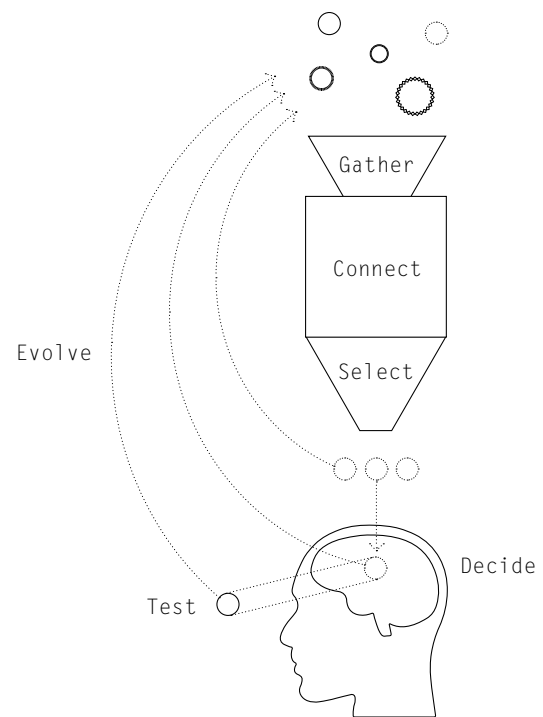8. *The Mechanism of the Mind*
Edward de Bono 1969

9. "You will in fact burn more energy during an intense cognitive task than you would vegging out watching Oprah or whatever."
Mental Work Requires Physical Energy
Benjamin C. Ampel, Mark Muraven and Ewan C. McNay2  2018

10. Unconscious design
Naoto Fukasawa

11. What will Industry 5.0 mean for manufacturing
Ben Rossi 2018

Journey ........................................................ Discover the unknown unknown worlds

**Unknown unknowns —**
the ones we don't know we don't know.

J.Luft, H.Ingham(1995)

Gather

Connect

Select
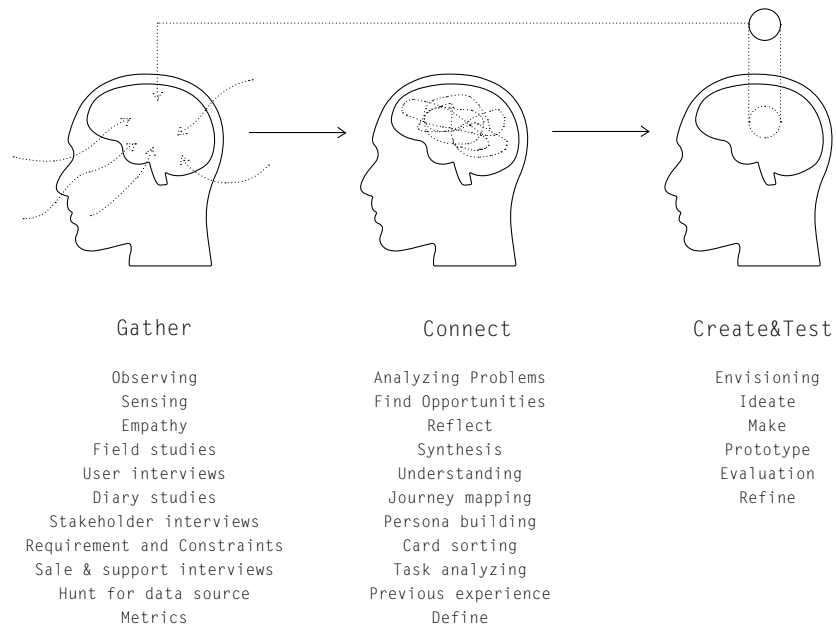
Evolve

Decide

Test

# Introduction

We know nothing but we can do everything.

The whole story started with my working experience and reflection in the design industry.
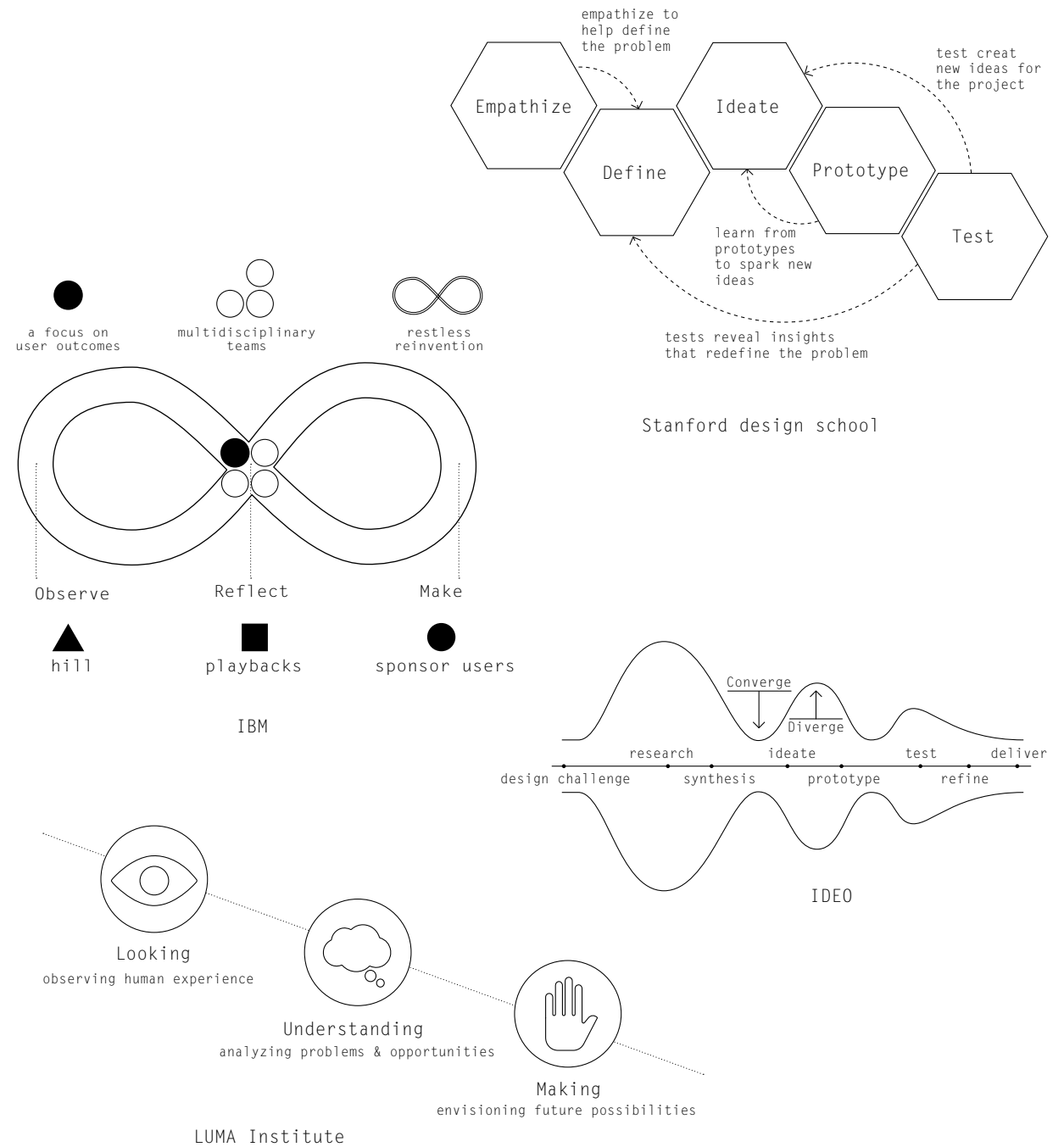
In the traditional design thinking process, the ability of empathy and imagination are important, especially in the early stage of designing a product. Therefore, there are design methods such as interviews, personas, brainstorming, and matrices to help designers better understand their users and problems and explore ideas outside of the box.

Taking a close look at those wildly used design thinking processes (image0-1) from well-known design schools, tech companies, research institutes, and consultancy, they all look different but sharing the same idea: 1. Gather Information 2. Make connections 3. Create ideas.

Are these design methods the best way to design?
Can we find a standard model that explains all?



empathize to help define the problem

test creat new ideas for the project

Empathize

Ideate

Define

Prototype

Test

learn from prototypes to spark new ideas

tests reveal insights that redefine the problem

Stanford design school

a focus on user outcomes

multidisciplinary teams

restless reinvention

Observe          Reflect          Make

hill          playbacks          sponsor users

IBM

Converge

Diverge

research          ideate          test          deliver

design challenge          synthesis          prototype          refine

IDEO

Looking
observing human experience

Understanding
analyzing problems & opportunities

Making
envisioning future possibilities

LUMA Institute

Gather

Observing
Sensing
Empathy
Field studies
User interviews
Diary studies
Stakeholder interviews
Requirement and Constraints
Sale & support interviews
Hunt for data source
Metrics

Connect

Analyzing Problems
Find Opportunities
Reflect
Synthesis
Understanding
Journey mapping
Persona building
Card sorting
Task analyzing
Previous experience
Define

Create&Test

Envisioning
Ideate
Make
Prototype
Evaluation
Refine

Imagine a Standard Model

Traditional Design Thinking Process(image0-1)

## Design is about connections[1]

When we say design, we are talking about creating connections. Connections between problems, knowledge, feeling, history, background, marketing — anything in your mind that can be related to the design project can be connected and generate ideas. The knowledge existing in your head is your design database. The purpose of doing all kinds of research is to increase the information to have more ways of connections, which might end up with a better chance to generate good ideas.
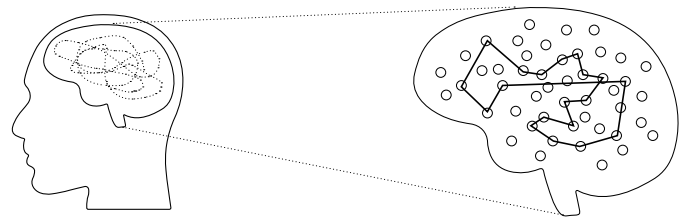


Design is about connection

Back to those design methods, though we have been designing in those ways for years, it does not mean that they are easy to apply in design.

The design process is still challenging. For one thing, it's hard for people to understand others fully. Like Harper Lee's writing in *To Kill A Mockingbird*, " You never really understand another person until you consider things from his point of view until you climb inside of his skin and walk around in it." Therefore, if a designer is not a user, he is likely to make a biased design decision. Misunderstanding users-needs is only one aspect, and the bias will be adding up by the deviation in information, analysis, and other related variables.
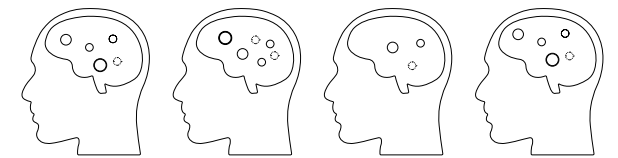
To avoid biased decisions, companies nowadays are addressing more comprehensive user research and encouraging cross-subjects cooperation. They are not only gathering more information but combining a diverse group to

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1. "Creativity is just connecting things"  Steven Jobs

making their design database larger. "The goal of design research is not to do research for its own sake. The point is to make sure everyone working towards the goal is benefiting from a collective understanding of the problem." (Erika Hall,2016)



Comprehensive research                    Multidisciplinary teams

Although good research might bring good design, there are problems with it:

1.Costly. It is inefficient, considering all the time, people and money put in. I saw that many small design teams, due to cost constraints, only did research "they think they are useful", making decisions "they think they are right" and rushed putting the product into the market to test if it works.

2.Repeated. Similar topics had been repeatedly designed and researched both at a historical time level or happening at the same time on different parts of the world. There are a lot of overlays both in the research part and even the final design. If you are a designer, you must have experienced the feeling of trying to make something unique but find out lots of people are doing the same thing. For some part, it is good because you find your allies and can learn from each other. But usually, because of the limitation of information transformation, we still did many repeated works.

3.limitation. Users can only choose from what the market provides them, then shopping becomes market-driven, not need-driven, which leads to the overlooked of real problems.
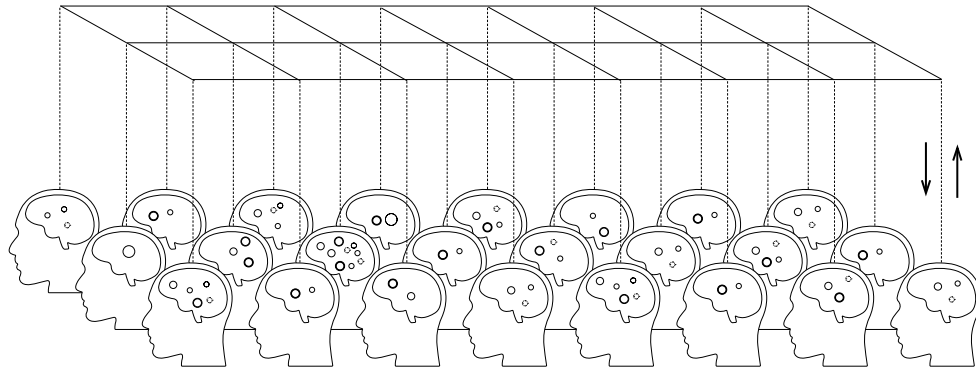
Upload and download thought

We are now experiencing an era when access to information is better, faster, cheaper than ever, which somehow reforms the traditional design process. We have fewer barriers between different religions, cultures, and languages. Ordinary people can also experience the best education, such as attending Harvard's online courses. Many papers, research, and reports which used to take researchers' whole lives to contribute are now becoming open source and can be easily found on the Internet. The explosion of access to knowledge reduces the cost of establishing the design database for individuals and design teams.

In the foreseeable future, better becomes  better, faster becomes faster, cheaper becomes cheaper. When things go to the extreme, like what Neuralink[1] is trying to do-- create a "direct cortical interface" to upload and download thought. When that happens, every person can stand on the shoulder of a giant. Every person's own experience comes together and becomes the giant.

1. Elon Musk's Neuralink : Founded in 2016, innovative Neuralink startup is developing so-called brain-machine interfaces, an advanced technology that integrates digital systems and the human brain.

Well, even besides the critical part of combining human and machine, the popularity of this technology is still in the far future -- it may happen ten years later, or tomorrow, but not now. Since we are already in this ocean of information, it is enough for us to develop a good design. However, our existing knowledge limits our accessibility. You can use the internet to search for answers you know you don't know, but it 's hard to find things you don't know you don't know. However, good design often lives in those places. You can only find them until you accidentally come across them "Oh! Why didn't I think about it before?"

We, humans, keep gathering more, knowing more, empowering our body in multiple ways to keep up with this fast-changing world. Alternatively, instead of knowing all the information to get the right answer, can we knowing nothing but only the answer?

**Can we know nothing, but have the accessibility to all possibilities?**
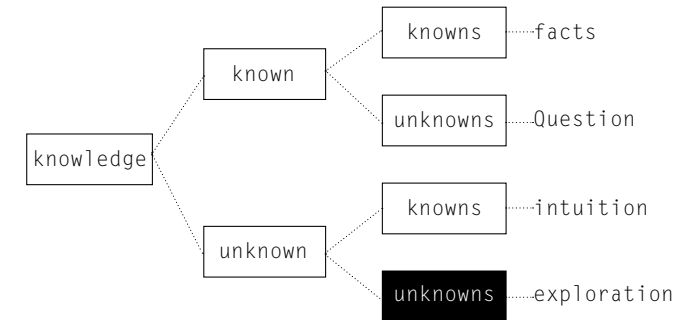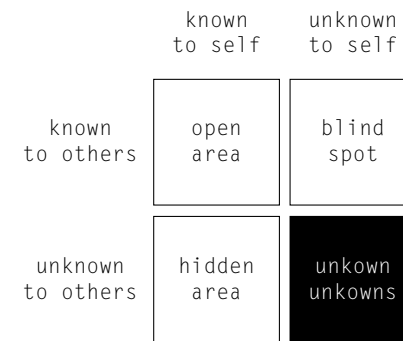


J.Luft, H.Ingham(1995)
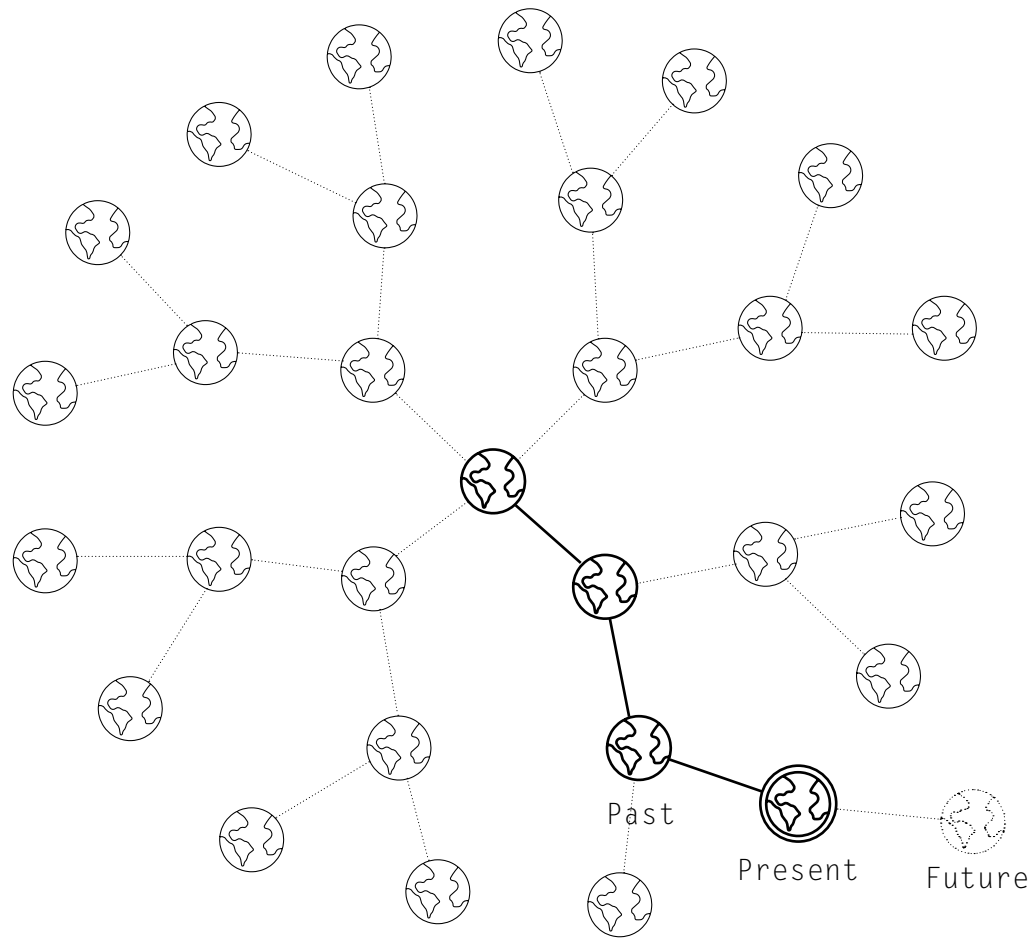
Chapter 1 Explore


    Choice making and alternative history
    Predictable future and mystery Past
    Experiment 1 - Possibilities cone
    Experiment 2-1 - Cylindrical everything
    Experiment 2-2 - Alternative history


The future is predictable, the past is mystery.

# Choice Making and Alternative History

There might be alternative solutions that provide better outcomes than we have now. We won't have the chance to even think about that, because we didn't choose that path in the past.

In 1950 Hugh Everett proposed the Many-Worlds[1] interpretation of quantum mechanics, which implies that there are perhaps infinitely universes exist in parallel at the same time same place as our own. Each of the world branch points is caused by a quantum event. All these parallel worlds are equally real but do not interact with each other.[2]

I clearly remember the day I decided to apply for the design major, not computer science. This decision became that branch point of my life — splicing my world into two, one is a designer me, another is a programmer me.
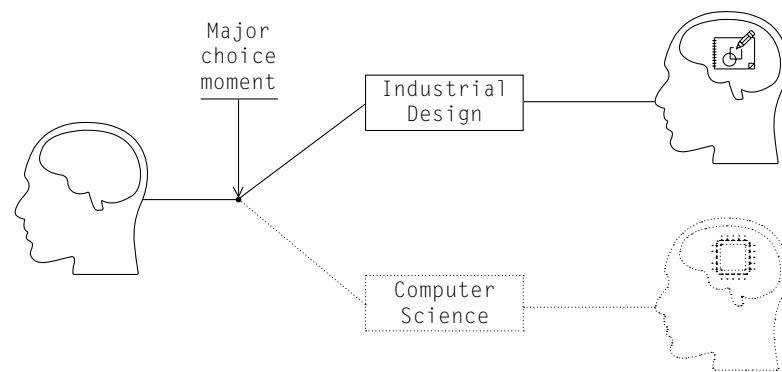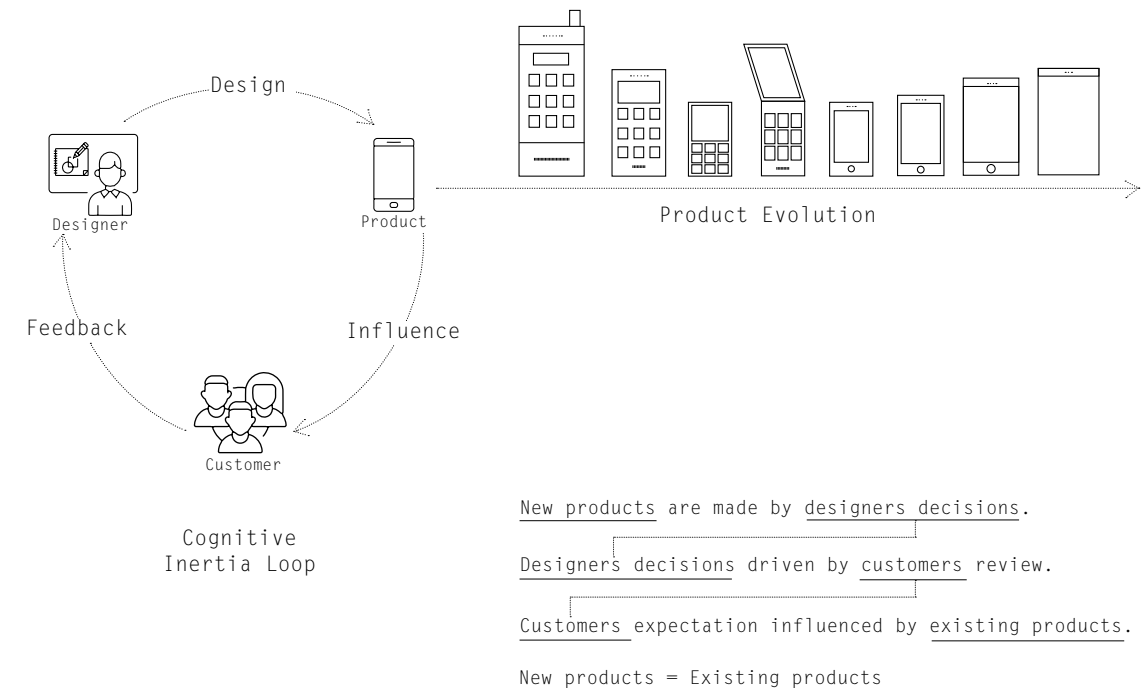


Even though I never regret my choice since then, I sometimes curious about my life as a programmer.

Real life is much complicated than this diagram, as we are making choices every day every time. The only sure thing is what we have experienced. For those we didn't choose, we have no way of knowing what can happen.

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1. Many-worlds interpretation, Hugh Everet, 1950.
2. Reference from Wikipedia.

Back to design, the idea is similar but different compared with a life choice. As the life cycle of the product is relatively shorter, designers have the chance to refine and modified it after it goes into the market. So we can see product iteration from generation to generation.



New products are made by designers decisions.

Designers decisions driven by customers review.

Customers expectation influenced by existing products.

New products = Existing products

If a designer only thinks about solving product problems, not the problem itself, he will trap in a loop of creating problems and solving his own problems. If a customer only settles for products from an existing market, not from his inner needs, he will pass wrong information to designers and influence their design decisions. In this cognitive inertia loop, whether it is the designer or the customer, if there is nothing changed dramatically, this loop will continue to run until this kind of product replaced by others.

## Predictable Future and Mystery Past

If our minds are trap by yesterday, we can only create our tomorrow based on what we have today. Can we design in a way where innovations and willingness are not trapped by the past?
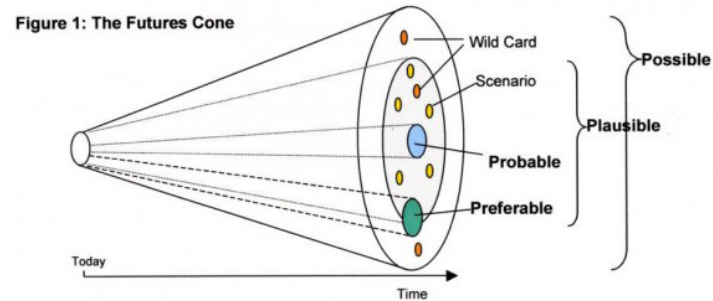


Future Cone[1]
Hancock and Bezold 1994

" Within the universe, you always explained one event as being caused by some earlier event. "  Stephen Hawking/A brief history of time

As everything is causally connected in our universe, by that means, the future is certain if we can find a standard model representing the causal relationship in the world. Though we cannot calculate all the factors to tell the future now, at least we can predict it.

Back to the cell phone evolution example, as this industry has developed for years, by just collecting the information from the past, we can predict the possible feature for the next generation. Let's say, the next iPhone — If it is only a square full-screen as expected, nothing excited comparing with the 2007 mode - the first touch screen cellphone, or 1973 - the first handheld mobile phone.

_____
1. *Theory of Change and the Futures Cone*. By sjef in Futures Words posted February 13, 2016.
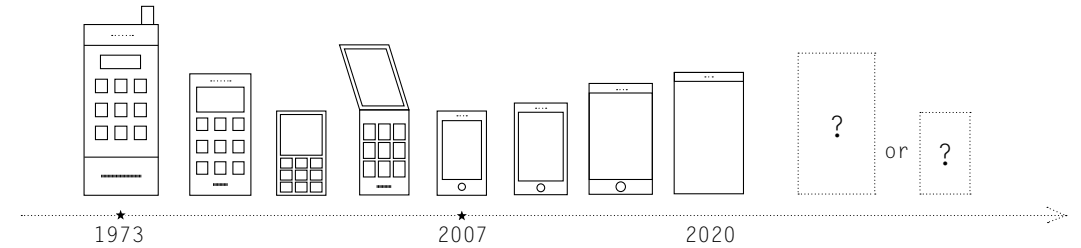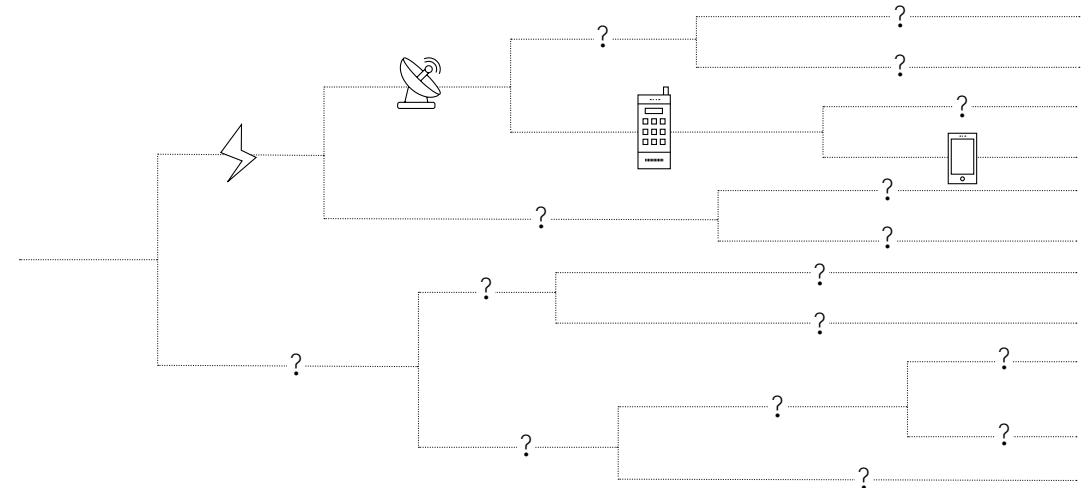


Instead of thinking about the future, let's step back to look at the alternative histories:

What will happen if we didn't have Apple's first touch screen cellphone?
What will happen if we didn't have the first handheld mobile phone designed?
What will happen if we didn't discovering the electricity ?
...
What will happen if there was no big bang?



The future is predictable because it depends on the decisions you made before, whereas the past is the mystery--it has too many possibilities.
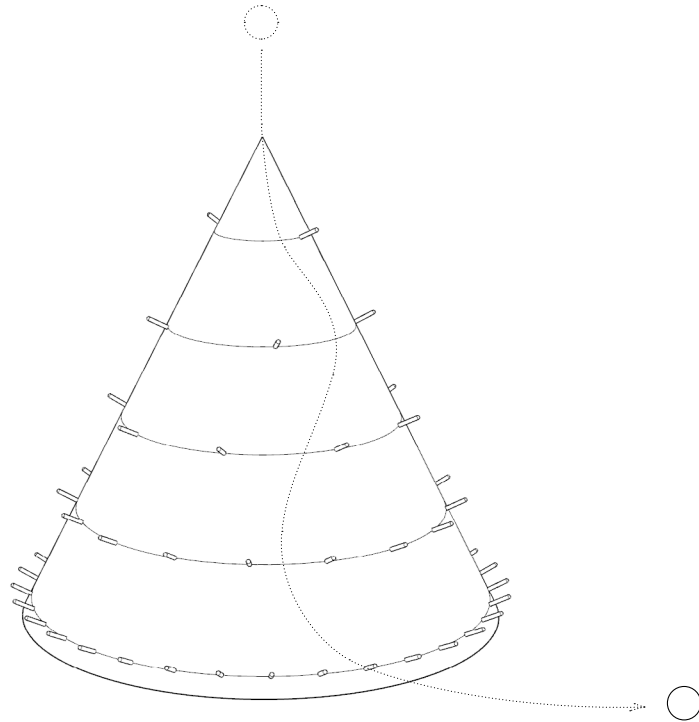
Experiment 1


Possibilities Cone

Universe
Time
Future
Probability

Realizing that the future is predictable, the past is mystery, I then jump into the journey of exploring time, universe,future and probability.

## Future

At this present, the are tons of possibility that can happen in the future. There are also countless pasts that lead to this present. If we count all the possibilities, the future and the past are mirror images. Unfortunately, we can only experience one past and one future above all the possibilities.
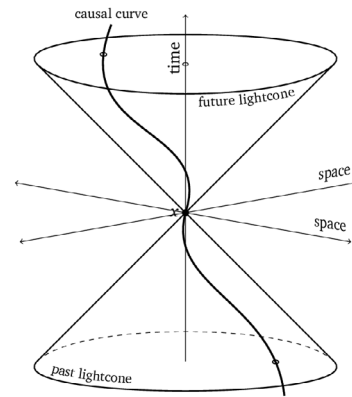


Future[1]

## Probability

The Galton Board is a mathematical model, which shows the probability theory of binomial distribution. I interpret it to a model of choice making and the possible future. We are always making decisions since we were born. All these decisions are causally related, building up today's us.
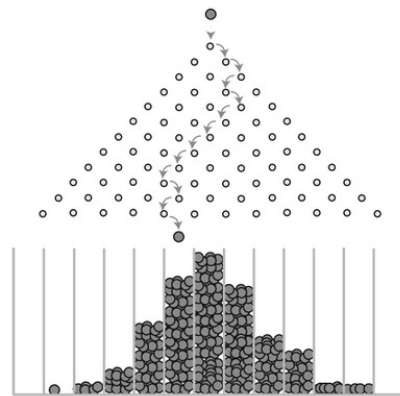


Probability[2]

1. Lightcone , Hermann Minkowski
2. Glton Board (also known as bean machine)

## Universe

We might just live in one of many universes. From our current knowledge, we can not communicate with each other. But if one day we find a way to access them, we can have the knowledge of every universe's past, every culture and all kinds of technology. When that happens, our future will not be constrained by our history, but can be developed according to all histories. Which means we have access to every possibility.
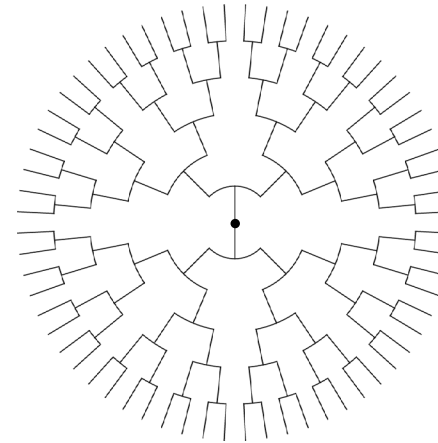


Universe

## Time

When I look at the tree ring, I am not only looking it through timing perspective, but also its physical transition-- the accumulation of the material. Each new annual ring's shape is based on the previous, and the next year ring shape is easy to predict.
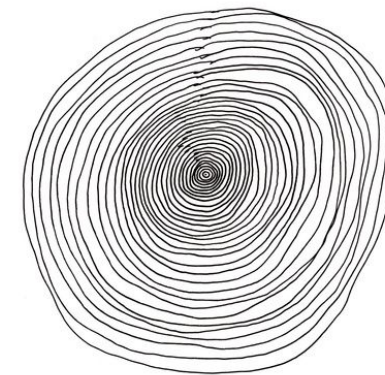


Time

Each of them tells a part of the story, but I want to build a model to hold them together — a model expressing every possibility and their predictable future in different universes, at different times.

I end up with this Possibility Cone.

## Explain

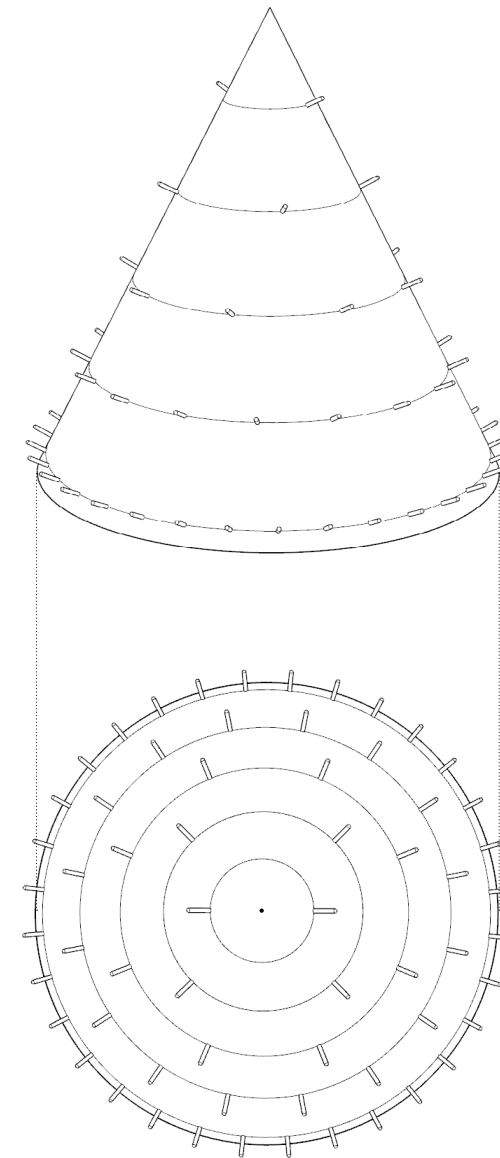The top point of the cone is a starting point (see image 1-1). This point can represent the beginning of life, story, or evolution. At this point, every future has an equal probability of happening.

The line between each layer represents a change, which creates some branch points. For each branch point, it can be approached form the top in one or multiple ways. Those paths are their alternative histories.

The past determines a possible future. (see image 1-2) If you throw a ball at any branch point on the cone, the possible outcome follows the Galton board Theory, though it is not exactly the same.
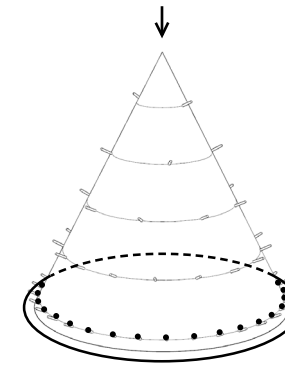


Unpredictable Future
Every possibility are equal
1-1
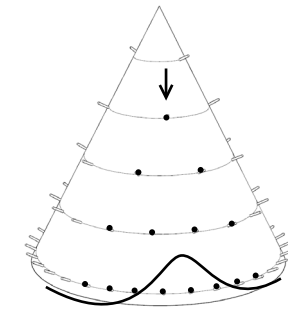
Predictable Future
Less Possibilities
1-2
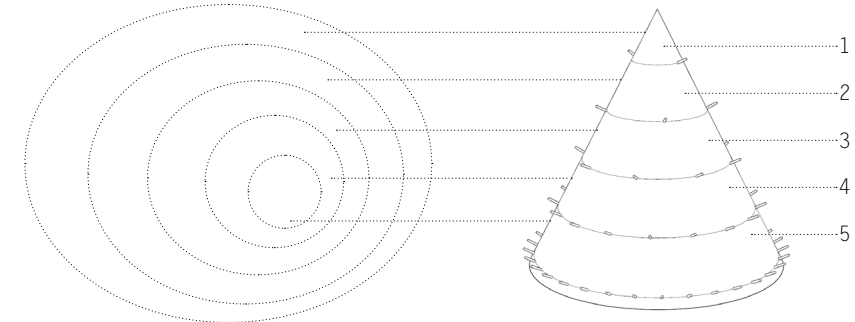


Classification
1-3

## Thoughts

In order not to trapped by the past, we might need to stand back and see the full picture of other possibilities. If we can not avoid being shaped by our history, we can learn from it and think alternatively.

As Yuval Noah Harari once said, "This is the best reason to learn history: not in order to predict the future, but to free yourself of the past and imagine alternative destinies. Of course this is not total freedom – we cannot avoid being shaped by the past. But some freedom is better than none."
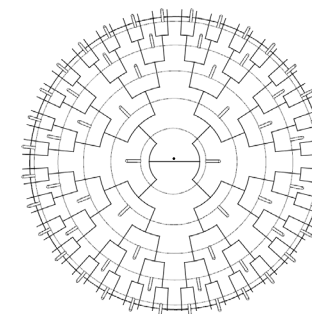


Many-Worlds
1-4
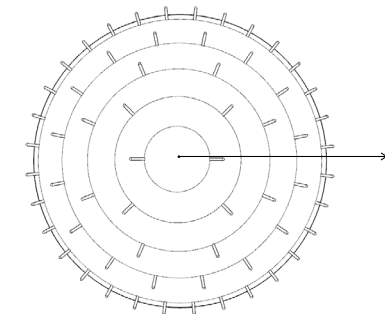
Time / Generation
1-5
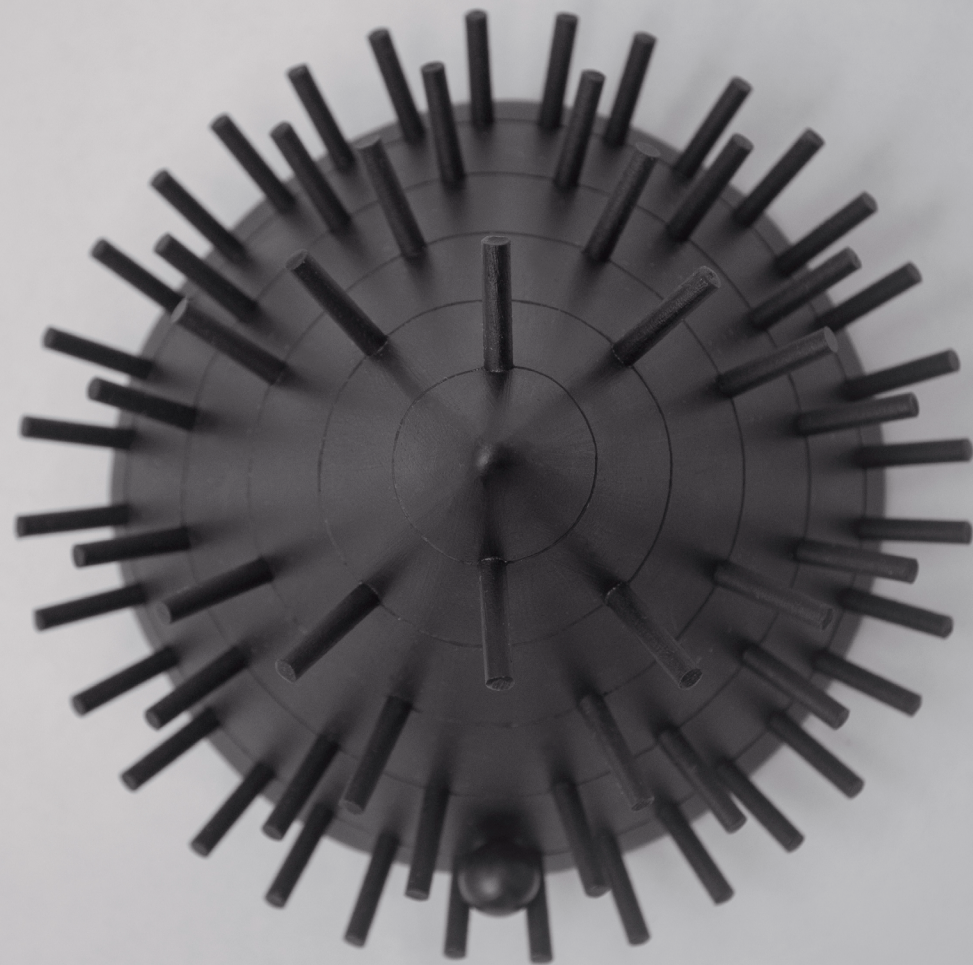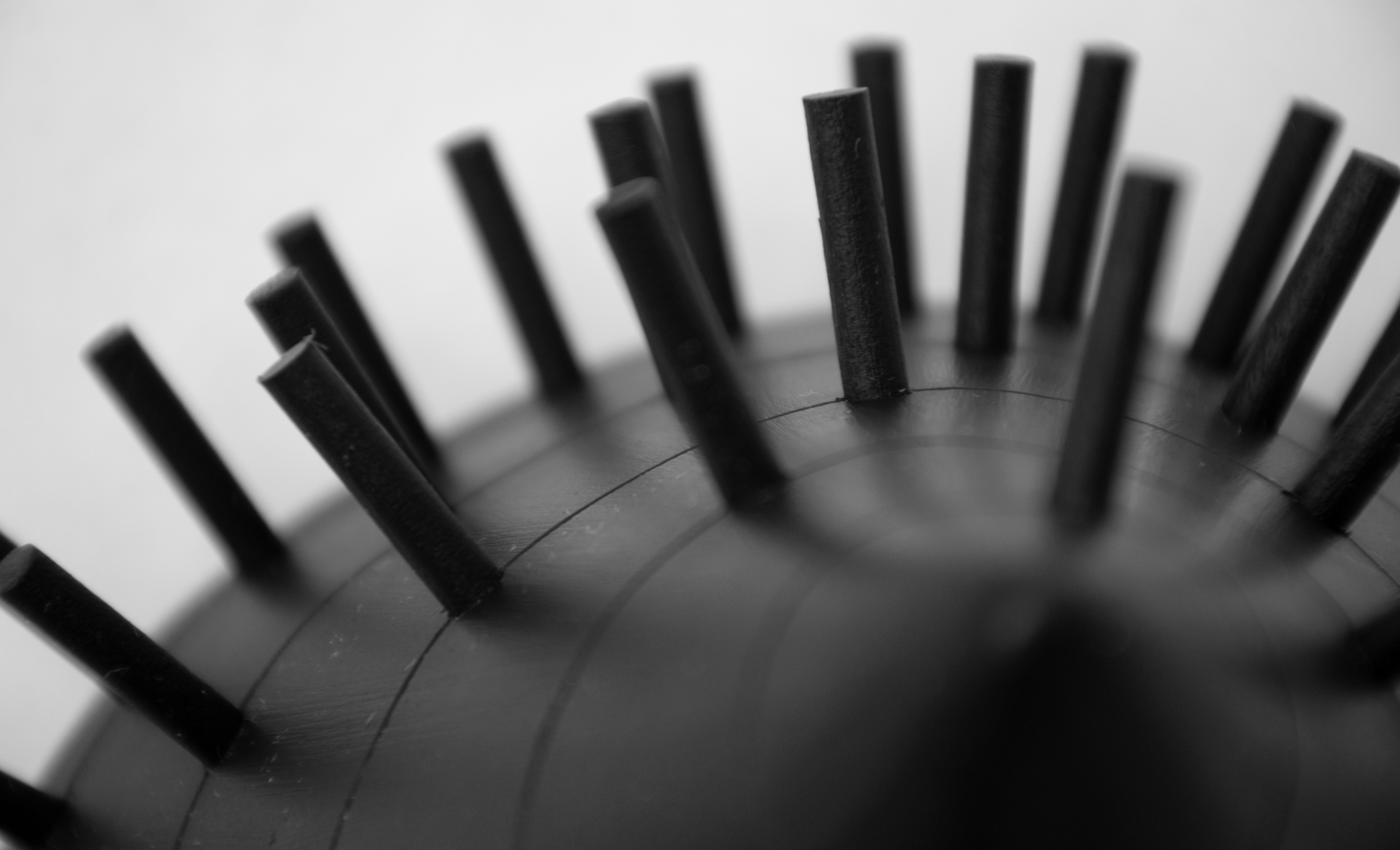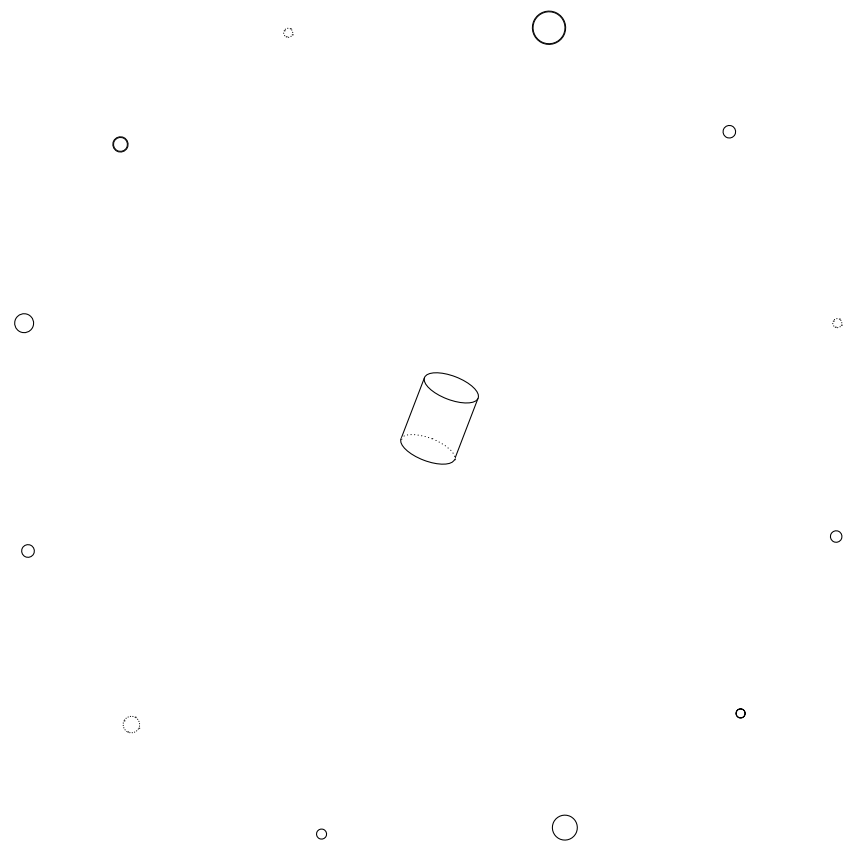
Experiment 2

2-1 Cylindrical Everything
2-2 Alternative History

2-1

Experiment 2-1

Cylindrical Everything
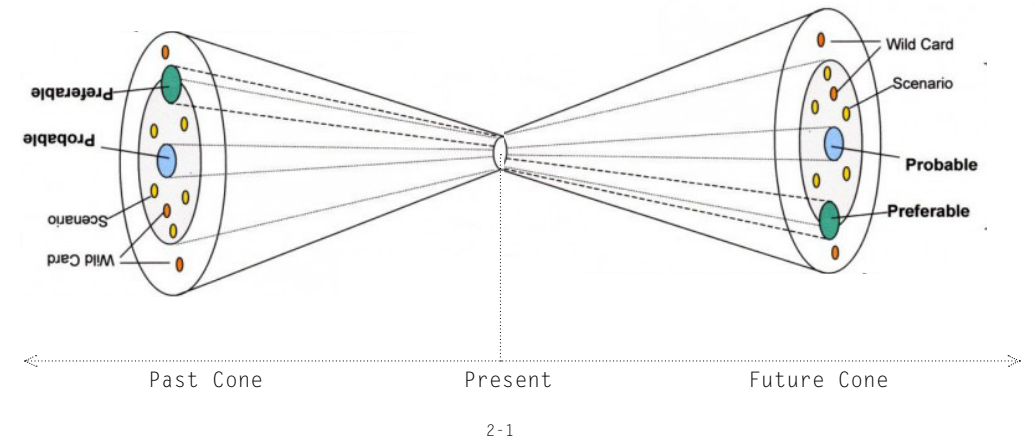
According to the light cone theory, the future cone is a mirror image of the past cone, which means, though we only experience one history, the actual number of the past is countless. Plus, the number of past is equal to the number of possible futures.

So how can you tell the time is moving forward, not moving backward? Or it is not linear at all.

We invented the concept of time as a tool to help us understand the world, but in reality, we even don't know how the world works.

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2-1: This image was adapted by Joseph Voros from the work of Hancock, T. & Bezold, C. (1994). Possible futures, preferable futures, Healthcare Forum Journal, Vol. 37, No. 2, 23-29.

The Origin of Species - From 1 to 87000000

Animals

Plants

You are here

Protists

Fungi

Bacteria

Archaea
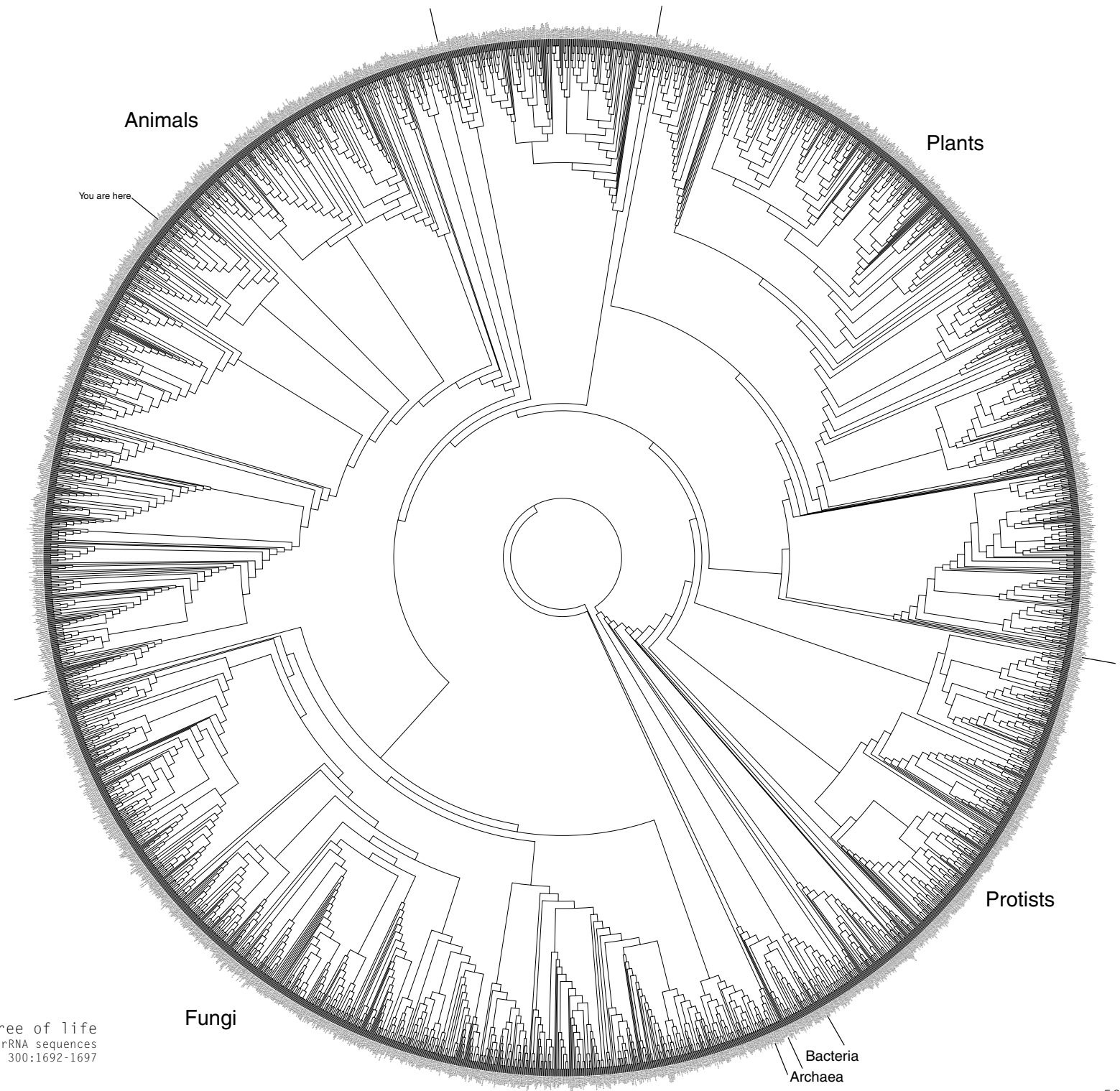
Tree of life
3,000 species, based on rRNA sequences
Science, 2003, 300:1692-1697

In the product evolution process, suppose for each product, it has the
possibility to evolve in every direction. After unlimited generation, and
infinite time, this product can evolve to everything. Which means, on the
other hand, every product has a chance to evolve to one thing.

By thinking so, I am curious about what if everything in our life becomes a
cylindrical looking at this moment?
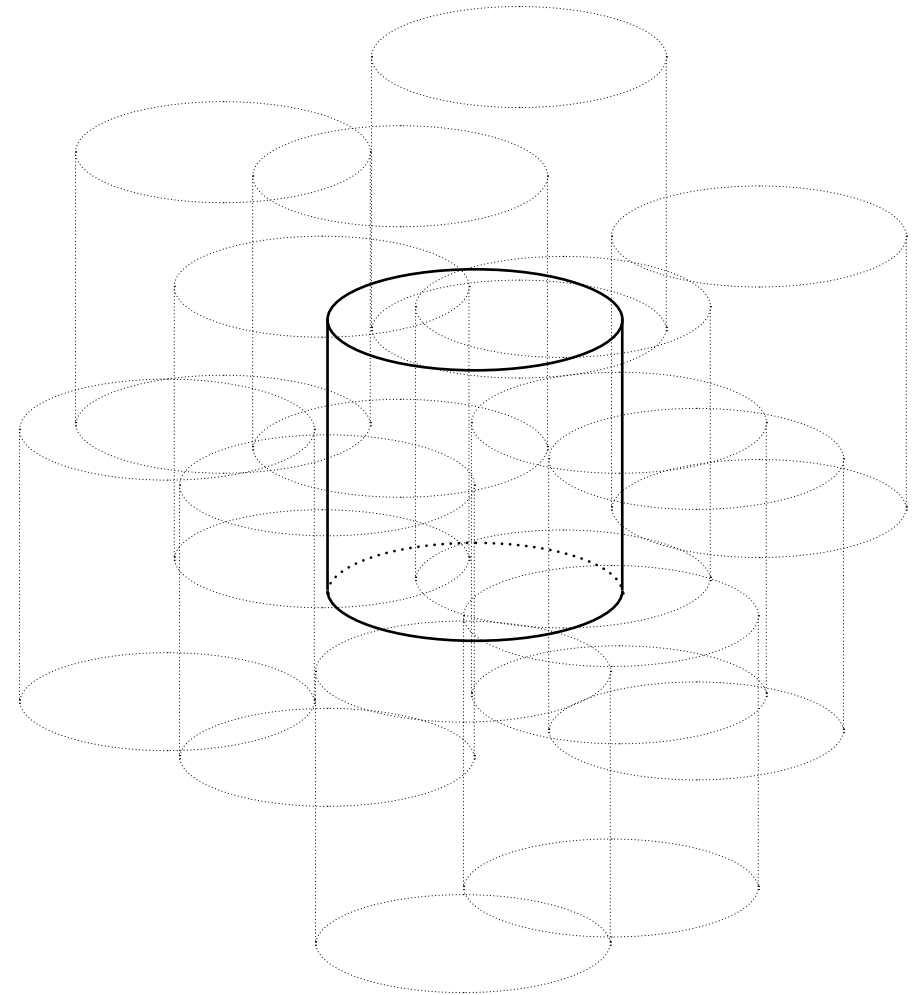
A video of a guy spending his whole life only interacting
with the cylindrical things. (The table is designed with
holes to fit in different kinds of cylinder product)

[00:00]
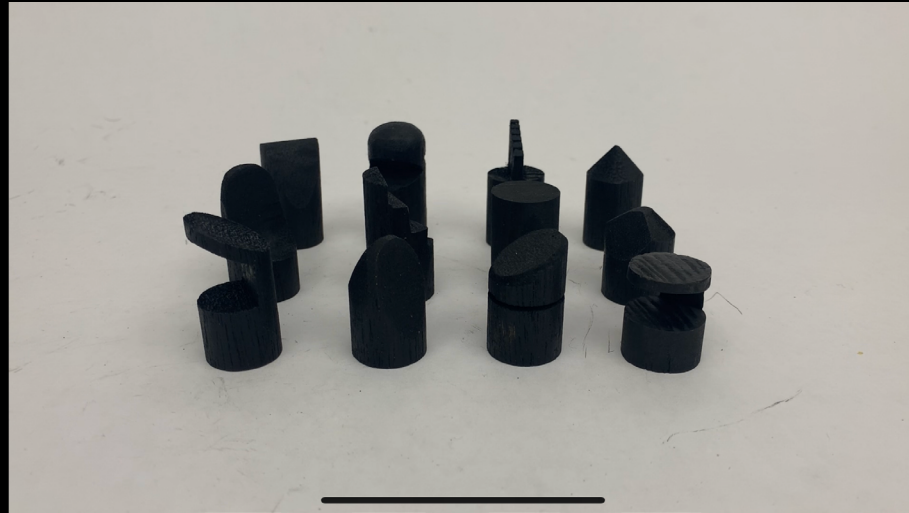


[00:36]



[01:22]
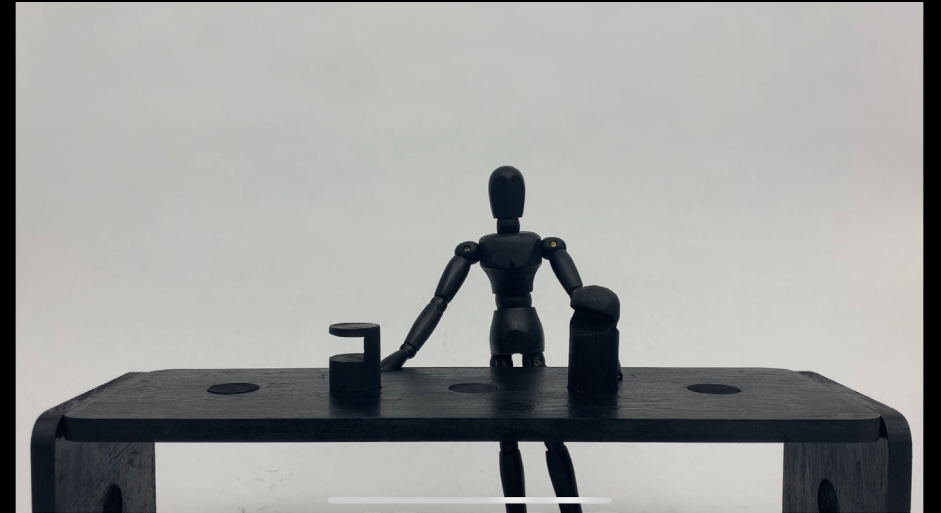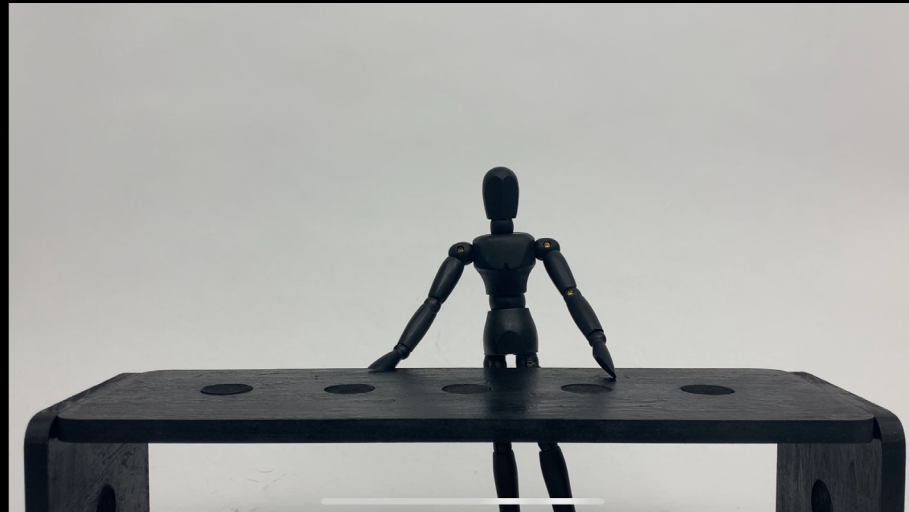


[02:06]
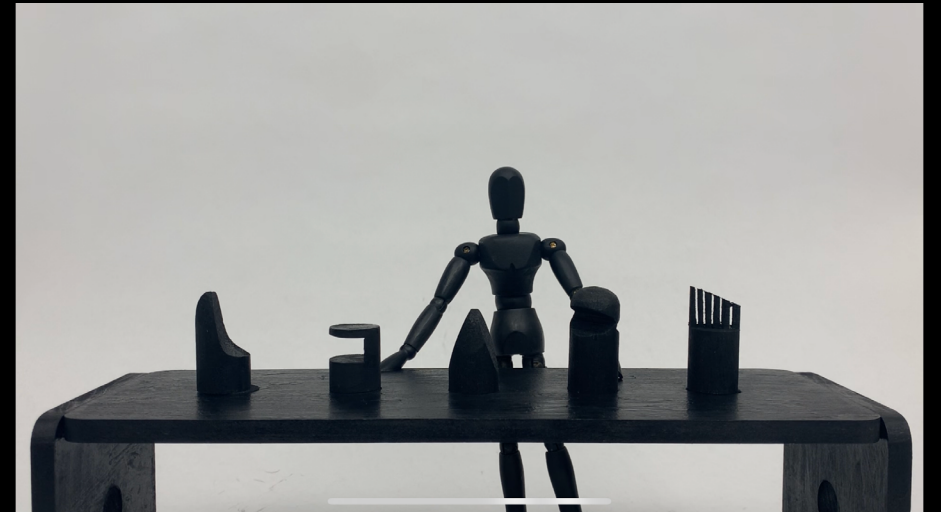
Experiment 2-2

Alternative History

I developed this cylindrical printer from the last experiment. Then I created a story to tell why the people in that world want this kind of printer, then standing at this printer's present to think about its possible future.

Wild Card

Scenario

**Probable**

**Preferable**

Past Cone          Present          Future Cone
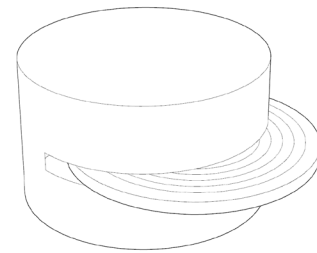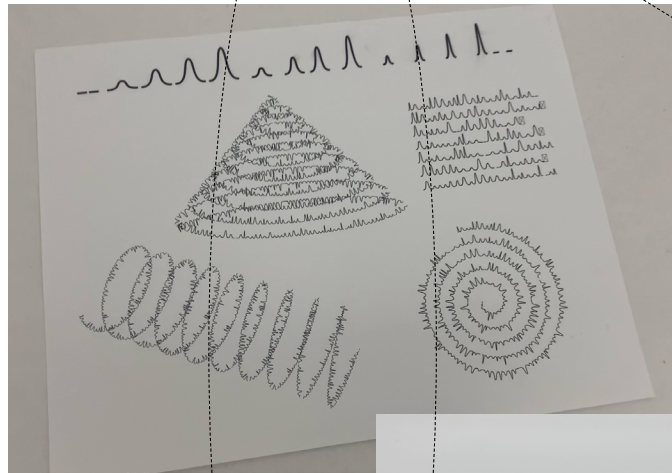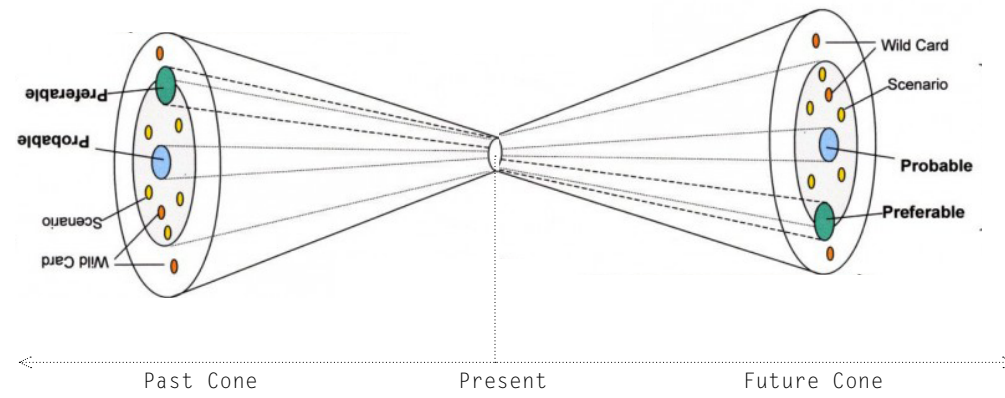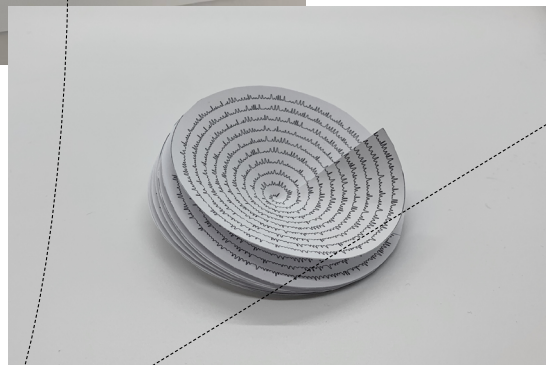


Language



Document
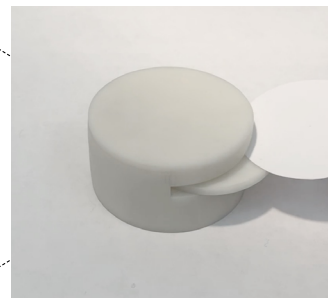


Cylindrical Printer
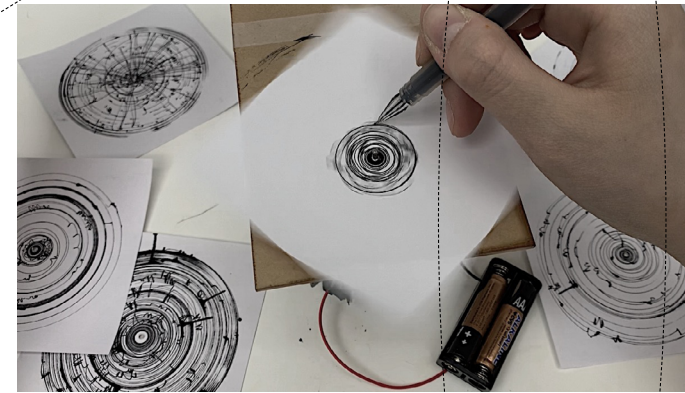


writing machine
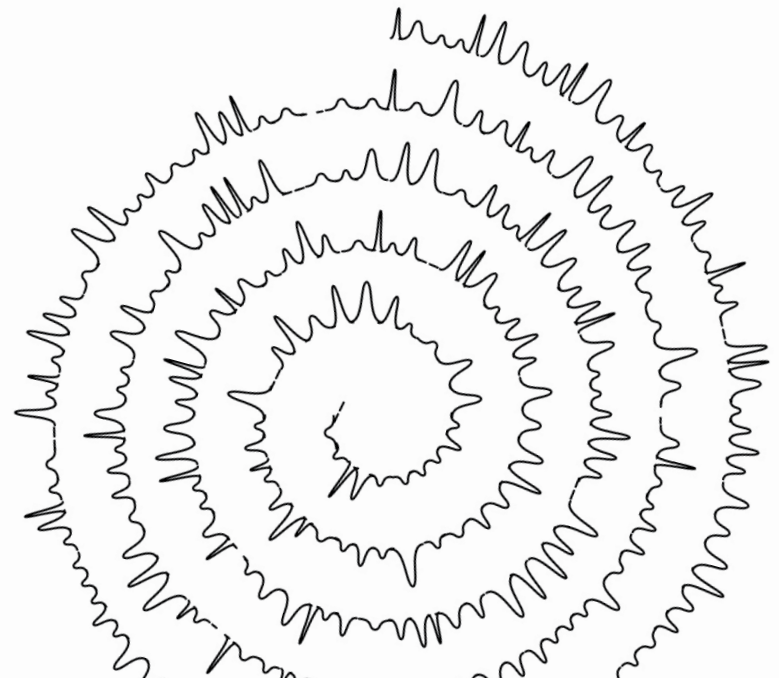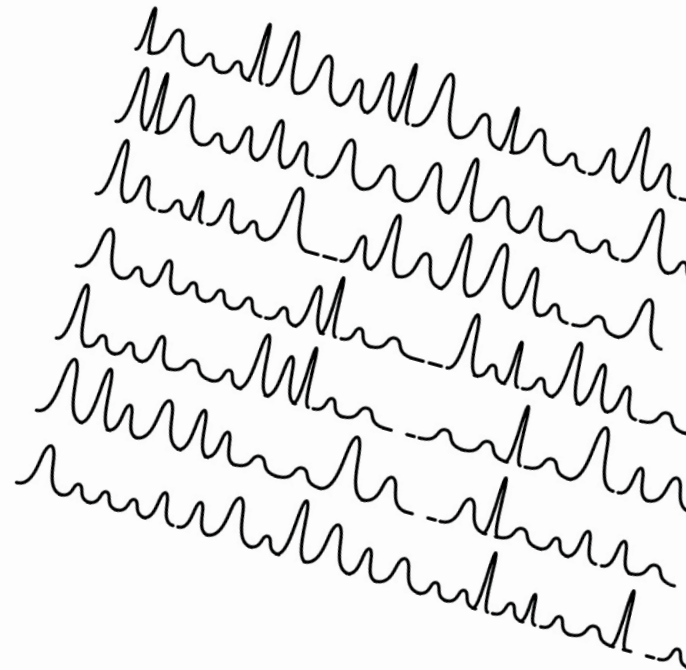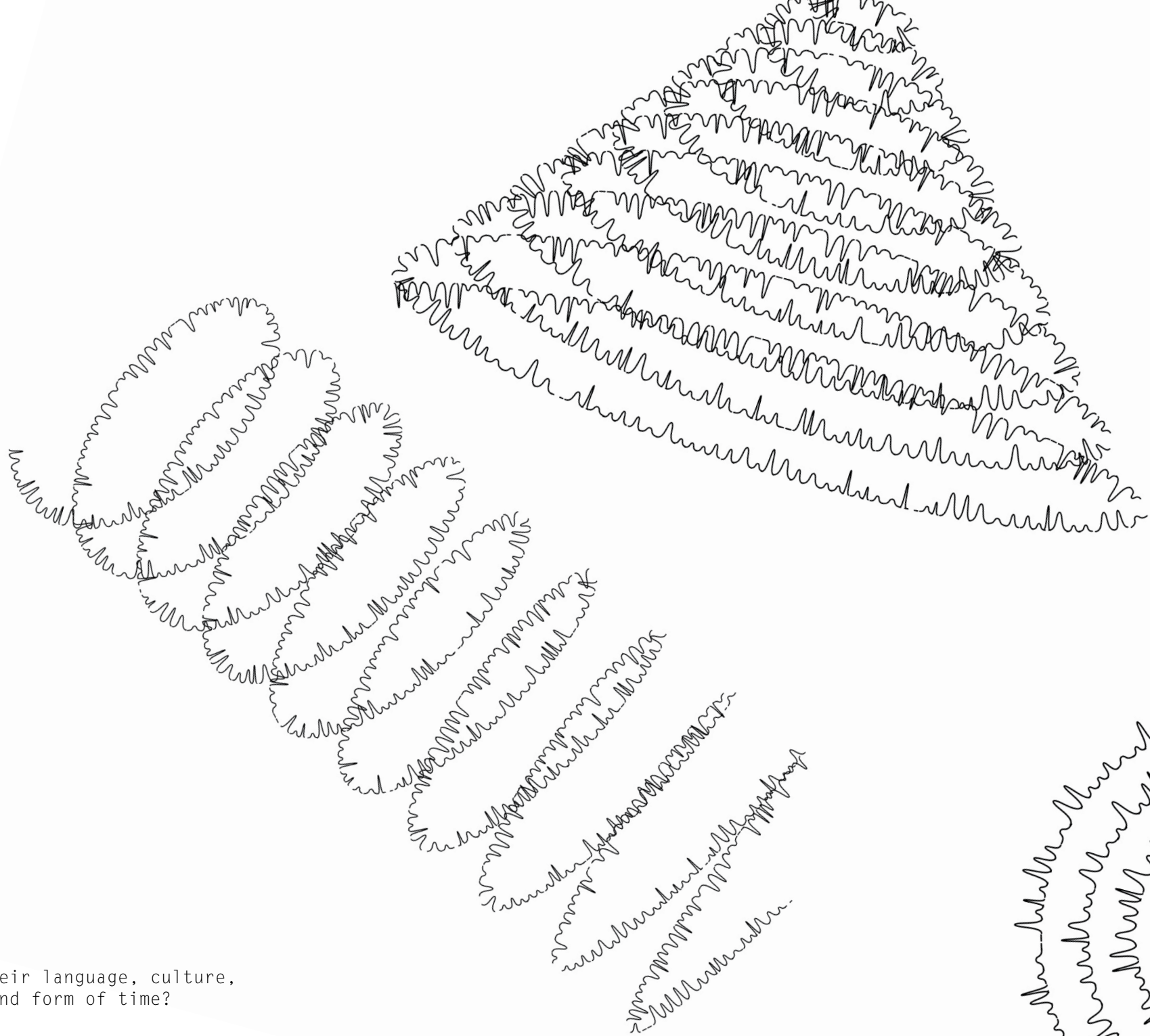
What is their language, culture,
history, and form of time?

Articles created with
writing machines.
Pattens encode meanings.
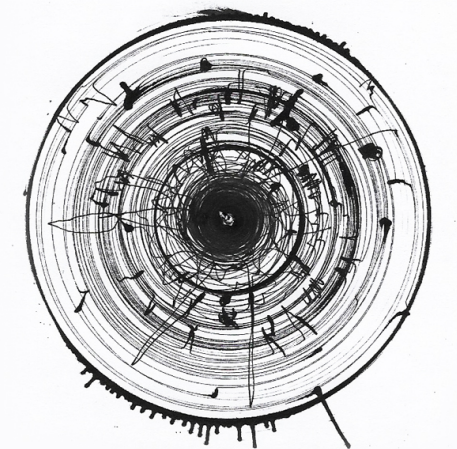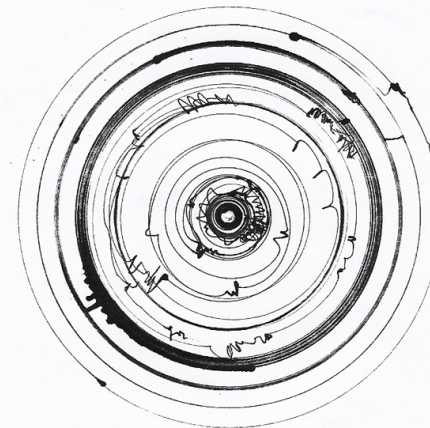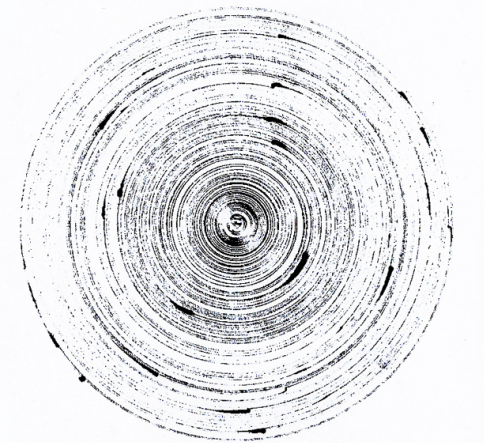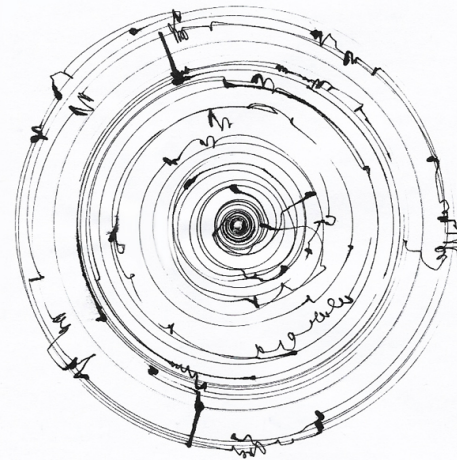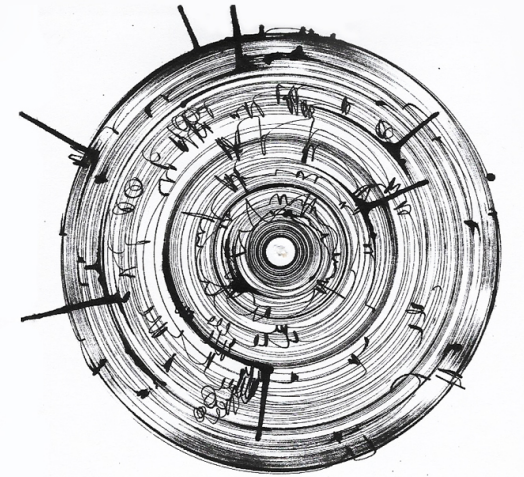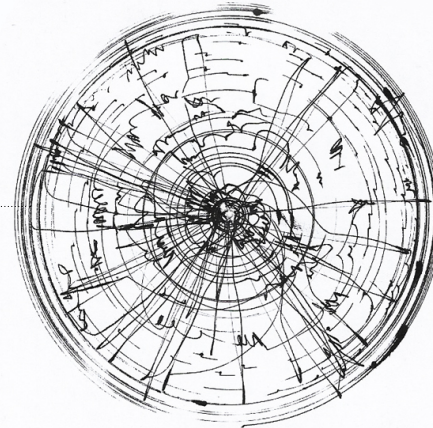
In that alternative world, they have
different languages and different way
of documentation.
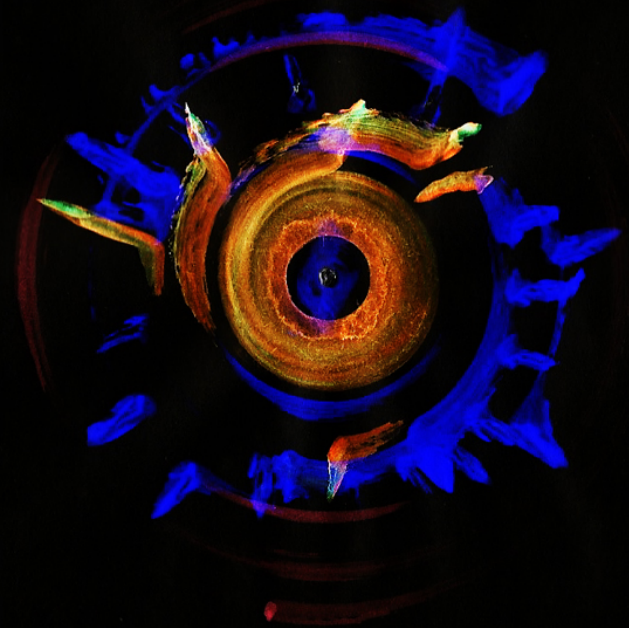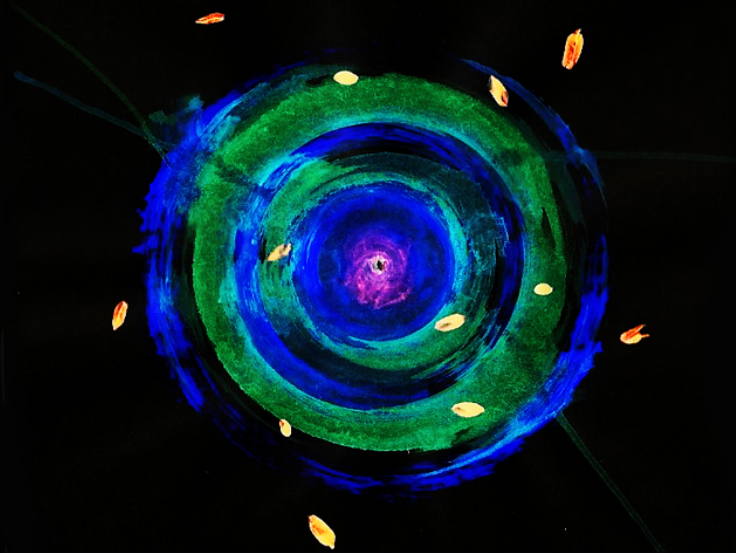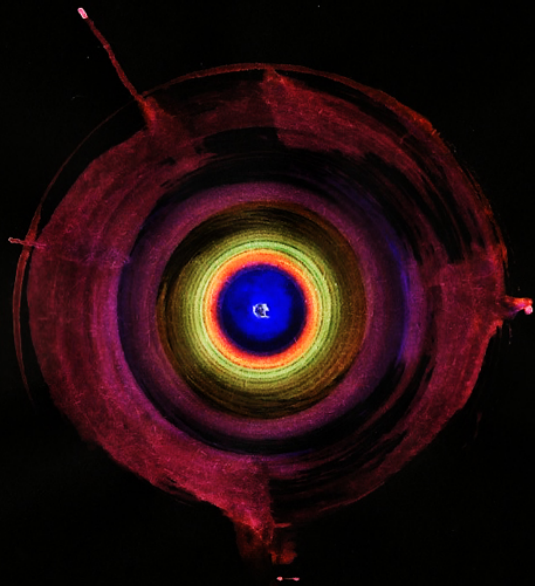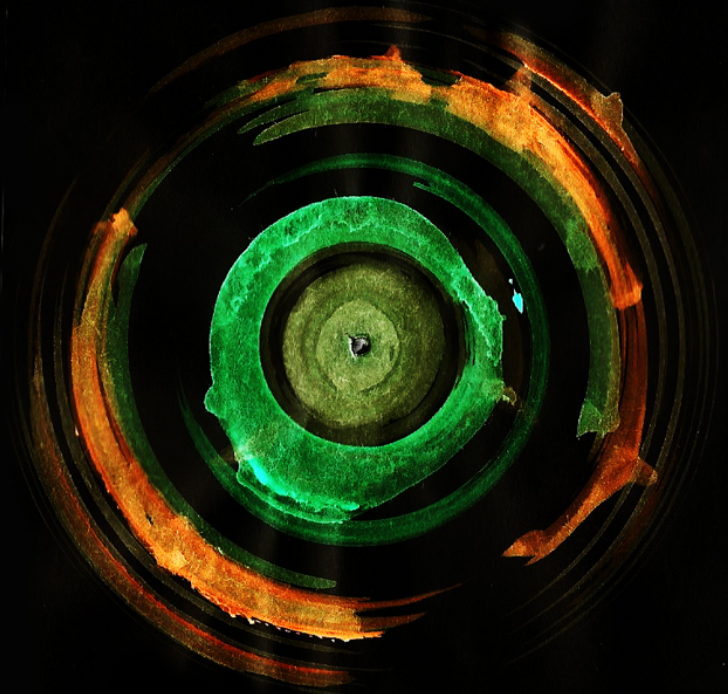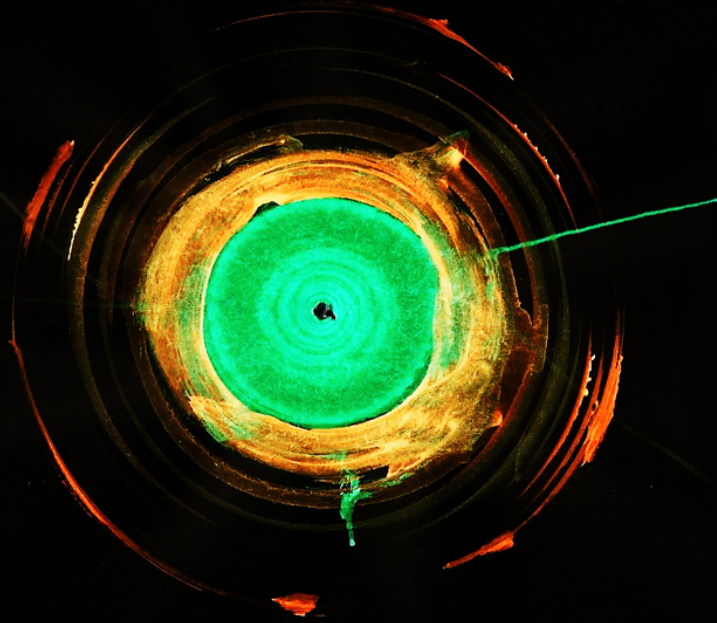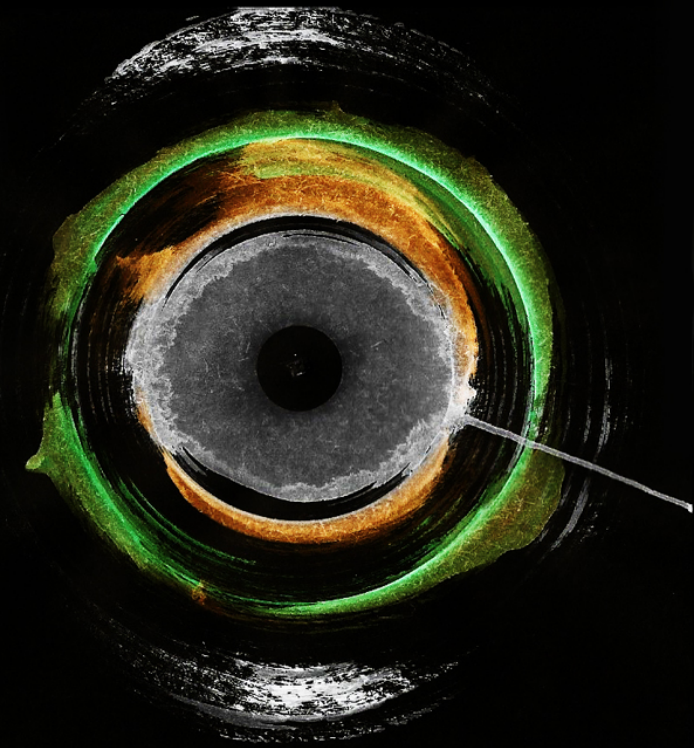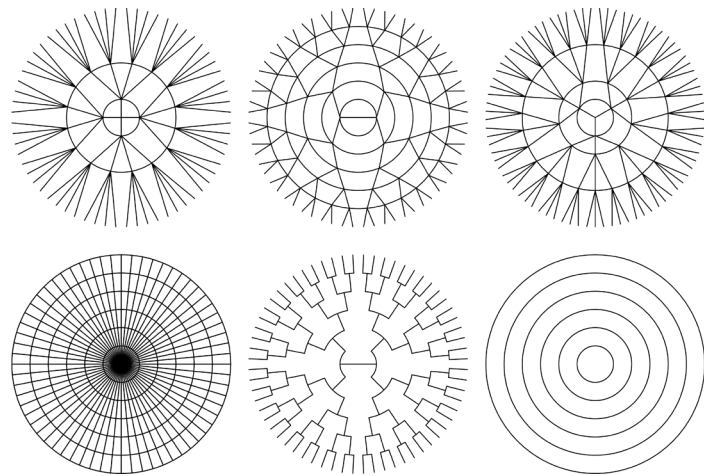
# Chapter 2 Possibilities

Finding all possibilities
Materials and standard Model
Experiment 3 - The dictionary of every product

## Finding all Possibilities

In the last chapter, I was really having fun in imagining the alternative history, which drives me the interest of building a system that can tell all other possibilities.

If I can do so, we will not have to predict the future, but to choose one future from all other certain futures.

It's like travel to an unknown place, but fortunately, you have the map. When you stand at the crossroads, you don't need to guess which way is the right one. Your mind is open, as you can see the whole picture at once. Even though you still don't have enough time to get every place you want in a day, you can at least plan a route from where you are.

Beijing, China
routlines.com

How to generate all other possibilities is a question.

When looking around those daily objects, no matter how complicated they are, they are all combined or controlled by very simple elements or rules -- DNA consists of only four genetic materials, ATCG. All the colors in nature are composed of red, yellow, and blue; Data information represented by various combinations of 0,1; Letters make up the language; Simple Lego brick can build multiple things.

Perhaps our complex world, as Einstein conjectured1, could be explained by one simple theory. Therefore, If we find the raw materials and discover the standard model, we can simulate how the world works, thus generate other possibilities.

1. Grand Unified Theory

DNA
A G C T

Color
R G B

Data
0 1

English
A-Z

Lego

❶ Materials

❷ Standard Model
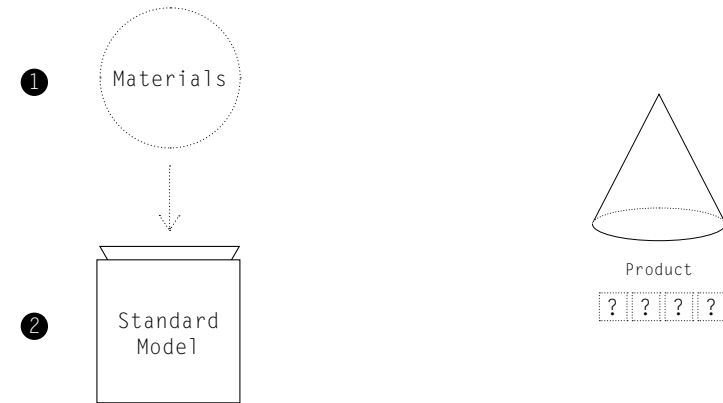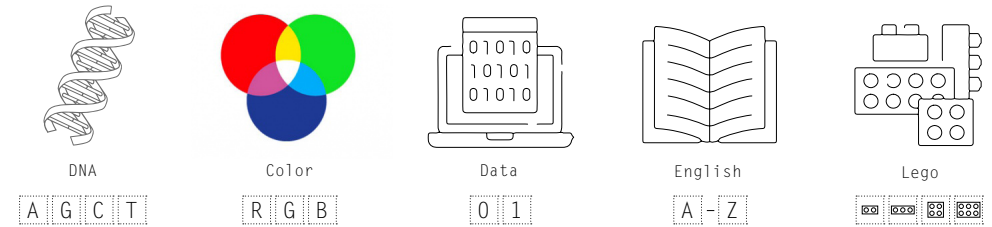
Product
? ? ? ?

# ❶ Materials

What are the raw materials for a product?

To answer this question, we need to backtrack to find why a product is designed.
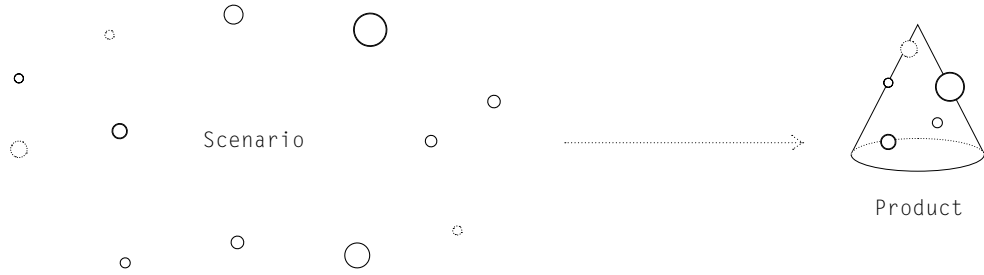


A product is designed to solve problems, or designed to pass some ideas. It must have a certain meaning or value. The need of this meaning or value is driven by a certain scenario. In other words, a scenario endues attributes to a product.
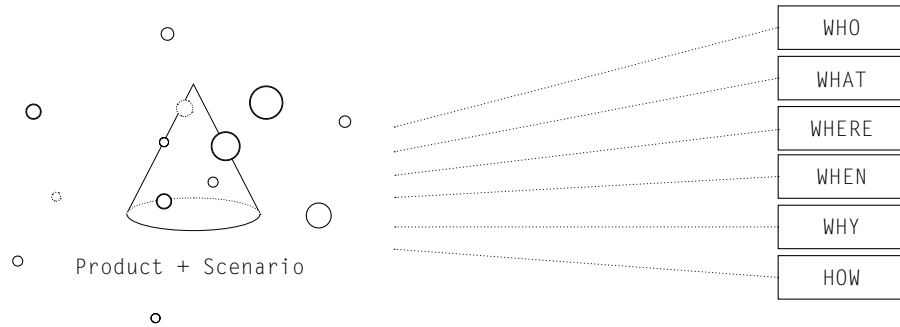


Since the attributes of a product need to be satisfied with the scenario, when analyzing the product material, we should not only start from the material itself, but also consider the impact of the scenario on it. Then I concluded the description of who, what, where, when, why, how as the raw materials for a product.
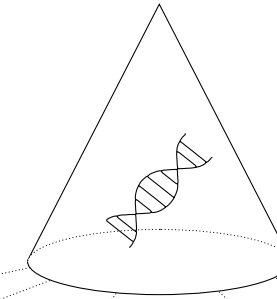


| WHO | WHAT | WHERE | WHEN | WHY | HOW |
|---|---|---|---|---|---|
| Who is this product for? | What are the product's basic details? | Where would someone use this product? | When should someone use the product? | What special? | How does the product work? |
| - Gender<br>- Age group<br>- Human or pets<br>- Lifestyle group<br>- (Other defined group) | - Functions<br>- Dimensions<br>- Materials<br>- Product<br>- Features | - Indoor or outdoor<br>- Floor/ Water/ Air/ Underground | - Time base<br>- Situation base | - special in who/what/when/ where/how | - Power source<br>- Technology |

# ❷ Standard Model

To find this standard
product design model,
we must go back to talk
about the design methods.

As we talked before, the
design is about making
connections. The more
material you have, the
more connections you can
make, and the more ideas
you will have, ending
with a higher probability
of having a good design.

This Gather- Connect-
Create design thinking
model also be fund
similarity to other
decision-making models
from different fields.
For, example the OODA
loop, a decision-
making model developed
by military strategist
and the United States
Air Force Colonel John
Boyd. It has the same
information collecting
and connecting process.

Looking for a standard
model that can apply in
every design is certainly
not an easy task. My
research here is only to
provide an idea.

**Design thinking loop**

Simplified model of
Stanford,IBM,IEDO design thinking methods

Gather       Connect       Create

**OBSERVE     ORIENT     DECIDE     ACT**

**OODA loop**
United States Air Force Colonel
John Boyd

Information / Materials

Gather

Connect

Machine Part- Generate
as much as possibilities

Evolve

Generate

Decide

Test

Human Part - Make use
of those possibilities

**My Imagination of Human-Machine
Idea Generate Model**

This diagram showing my idea about how a human-machine cooperate design
thinking model could be.
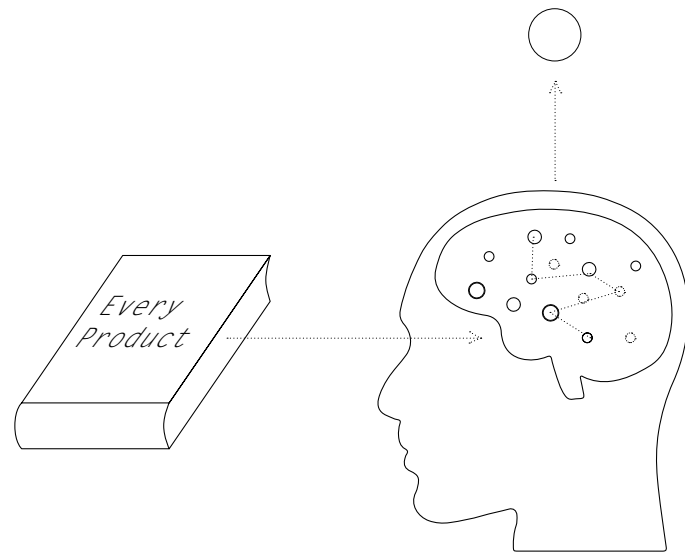
Experiment 3

The dictionary of every product

## The Idea

Though it's hard for my current ability to build a standard model that can generate product design from scratch, I can utilize some existing martial at this staring point.

For example, use the existing product description.

If I can deconstruct all the product descriptions, and use them as the base materials to construct new ones. I can create a library of infinite product descriptions, which includes not only the product we already have but also the products that do not exist.

❶ Materials — Deconstruct existing product descriptions

❷ Standard Model — Language model

❸ ○○○ — Generated new Product descriptions
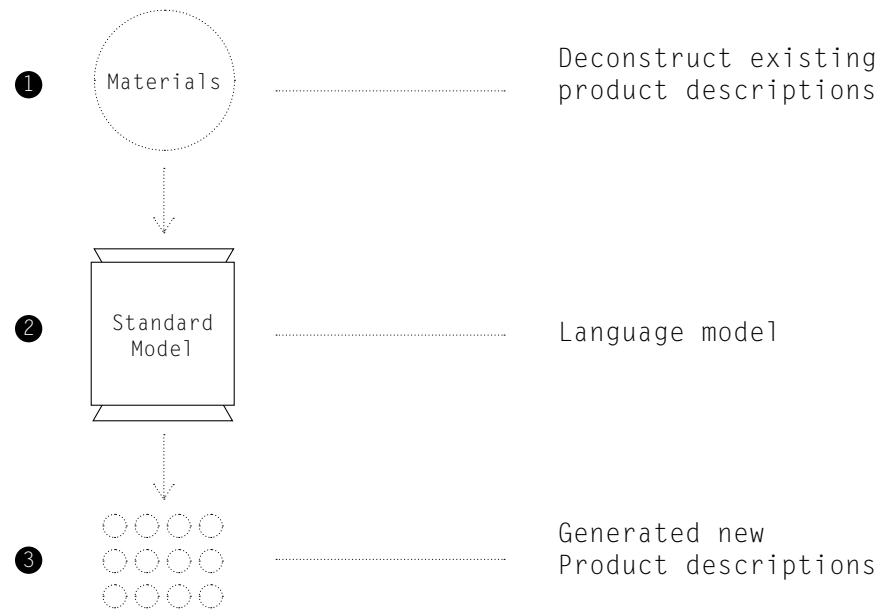
Product description
Generate Model

## Why language

There are three level of representing information[1]: symbolic / conceptual/ associationist . The language can seem as strings of symbols that can be processed by different kinds of automata. Language gives room for our imagination which fill up the information gap for the incompleteness of language.

Chair
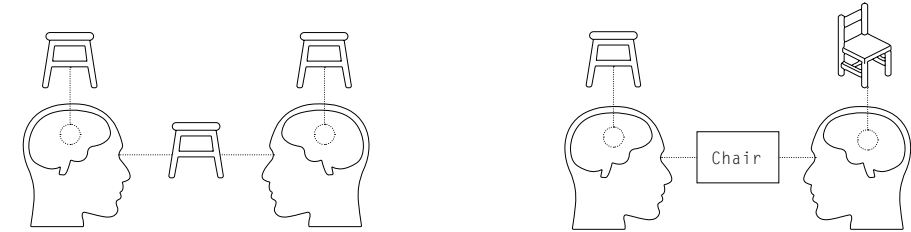
## Why randomize

Things happened by reasons, not random. We use the word "random" to simplify those complicated systems, in order to easier understanding our world.

Designs are made for reasons. There are many factors that will influence the outcome of a design. Maybe we can use the word "random" to simplify the complicated relationship of those factors, in order to easier generate design ideas.
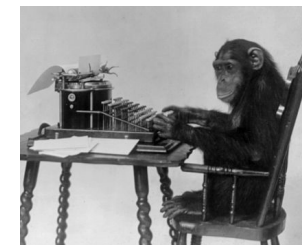
Infinite monkey theorem
Émile Borel 1913
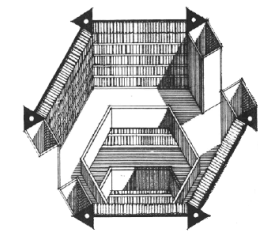
The Library of Babel
Jorge Luis Borges 1941

1. *Conceptual Space*, Perter Gardenfors, Chapter 2, 2000

Existing product descriptions
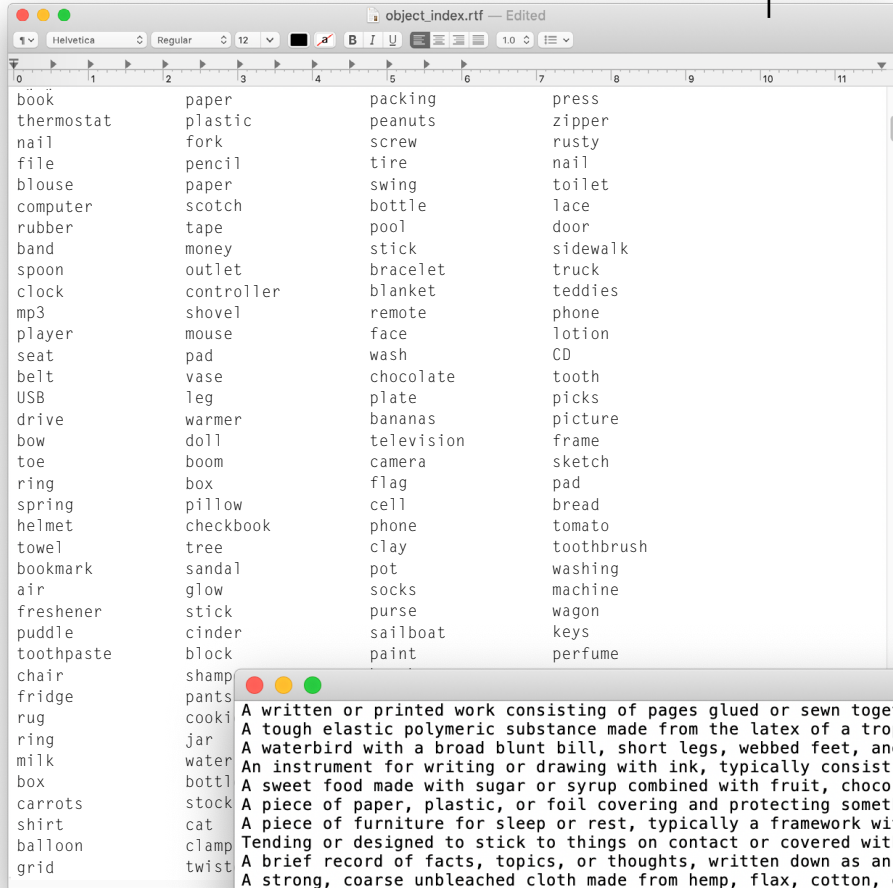
❷ Search for standard product descriptions

❶ Collect product names

**Dictionary**

Search for a word 🔍

🔊 **book**
/bŏŏk/

*noun*

1. a written or printed work consisting of pages glued or sewn together along one side and bound in covers.
"a book of selected poems" ✓

Similar: volume | tome | work | printed work | publication | title | opus ⌄

2. a bound set of blank sheets for writing or keeping records in.
"an accounts book" ✓

Similar: notepad | notebook | pad | memo pad | exercise book | binder ⌄

*verb*

1. reserve (accommodations, a place, etc.); buy (a ticket) in advance
"I have booked a table at the Swan"

Similar: reserve | make a reservation for

2. make an official record of the name and other perso...
"the cop booked me and took me down to the statio..."

❸ Use a python script to help collecting the data

⬤⬤⬤ *find definition.py - /Users/yshen/Desktop/python/find/find definition.p...*

```
# -*- coding: utf-8 -*-
import time
import requests
from bs4 import import BeautifulSoup

filename = "object_index.txt"

with open(filename) as f:
    lines = f.readlines()
    output = open('definition.txt', 'w+')
    for line in lines:
        word = line.strip()
        try:
            url = "https://www.lexico.com/en/definition/" + word
            r = requests.get(url)
            soup = BeautifulSoup(r.text, 'html.parser')
            div = soup.find(name='span', attrs={'class': 'ind'})
            data = (div.get_text())
            output.write(data.strip() + '\n')
        except:
            print("Parsing word %s failed." % word)
        time.sleep(0.5)
    output.close()
```

Ln: 1    Col: 0

⬤⬤⬤ object_index.rtf — Edited

¶ ⌄  Helvetica ⌄  Regular ⌄  12 ⌄  ■ ✎  **B** *I* U  ≡ ≡ ≡ ≡  1.0 ⌄  ≣ ⌄

| book | paper | packing | press |
| thermostat | plastic | peanuts | zipper |
| nail | fork | screw | rusty |
| file | pencil | tire | nail |
| blouse | paper | swing | toilet |
| computer | scotch | bottle | lace |
| rubber | tape | pool | door |
| band | money | stick | sidewalk |
| spoon | outlet | bracelet | truck |
| clock | controller | blanket | teddies |
| mp3 | shovel | remote | phone |
| player | mouse | face | lotion |
| seat | pad | wash | CD |
| belt | vase | chocolate | tooth |
| USB | leg | plate | picks |
| drive | warmer | bananas | picture |
| bow | doll | television | frame |
| toe | boom | camera | sketch |
| ring | box | flag | pad |
| spring | pillow | cell | bread |
| helmet | checkbook | phone | tomato |
| towel | tree | clay | toothbrush |
| bookmark | sandal | pot | washing |
| air | glow | socks | machine |
| freshener | stick | purse | wagon |
| puddle | cinder | sailboat | keys |
| toothpaste | block | paint | perfume |
| chair | shamp | | |
| fridge | pants | | |
| rug | cooki | | |
| ring | jar | | |
| milk | water | | |
| box | bottl | | |
| carrots | stock | | |
| shirt | cat | | |
| balloon | clamp | | |
| grid | twist | | |

❹ Create the prodcut discription dataset

📄 definition.txt — Edited ⌄

A written or printed work consisting of pages glued or sewn together along one side and bound in covers.
A tough elastic polymeric substance made from the latex of a tropical plant or synthetically.
A waterbird with a broad blunt bill, short legs, webbed feet, and a waddling gait.
An instrument for writing or drawing with ink, typically consisting of a metal nib or ball, or a nylon tip, fitted into a metal or plastic holder.
A sweet food with sugar or syrup combined with fruit, chocolate, or nuts.
A piece of paper, plastic, or foil covering and protecting something sold.
A piece of furniture for sleep or rest, typically a framework with a mattress and coverings.
Tending or designed to stick to things on contact or covered with something that sticks.
A brief record of facts, topics, or thoughts, written down as an aid to memory.
A strong, coarse unbleached cloth made from hemp, flax, cotton, or a similar yarn, used to make items such as sails and tents and as a surface for oil painting.
A very fine slender piece of metal with a point at one end and a hole or eye for thread at the other, used in sewing.
The lower surface of a room, on which one may walk.
A soft white limestone (calcium carbonate) formed from the skeletal remains of sea creatures.
The seed-bearing part of a plant, consisting of reproductive organs (stamens and carpels) that are typically surrounded by a brightly colored corolla (petals) and a green calyx (sepals).
A piece of thick, stiff paper or thin pasteboard, in particular one used for writing or printing on.
The transmission and reception of electromagnetic waves of radio frequency, especially those carrying sound messages.
A sharp prowed, flat-bottomed New England sailboat, with one or two masts each rigged with a triangular sail.
A substance or appliance used to improve or maintain something's condition.
A covering for the foot, typically made of leather, having a sturdy sole and not reaching above the ankle.
A substance which removes or conceals unpleasant smells, especially bodily odors.
A pair of lenses set in a frame resting on the nose and ears, used to correct or assist defective eyesight or protect the eyes.
A comfortable slip-on shoe that is worn indoors.
A loose granular substance, typically pale yellowish brown, resulting from the erosion of siliceous and other rocks and forming a major constituent of beaches, riverbeds, the seabed, and deserts.
Material manufactured in thin sheets from the pulp of wood or other fibrous substances, used for writing, drawing, or printing on, or as wrapping material.
An implement with two or more prongs used for lifting food to the mouth or holding it when cutting.
A small tray or mat placed under a bottle or glass to protect the table underneath.
A small bowl-shaped container for drinking from, typically having a handle.
A large keyboard musical instrument with a wooden case enclosing a soundboard and metal strings, which are struck by hammers when the keys are depressed. The strings' vibration is stopped by dampers when the keys are released and can be regulated for length and volume by two or three pedals.
The round fruit of a tree of the rose family, which typically has thin red or green skin and crisp flesh. Many varieties have been developed as dessert or cooking fruit or for making cider.
Woven or felted fabric made from wool, cotton, or a similar fiber.
Any of the fine threadlike strands growing from the skin of humans, mammals, and some other animals.

Use a python script to help collecting the data

Use Markov Chains
to Deconstruct and Rebuild Product Descriptions

We are now having a dataset of the product description. We can then generate
new ones based on our raw materials from existing product descriptions if we
can analyze how the language in those descriptions is combined.

The Markov Property states that we do not know all of history, just the
previous history only, we are memoryless. Making a prediction requires just
the last event and the likelihood of future events.

Here I am going to introduce the Markov Chains as a way to simulate the
sequence of events. By analyzes the words and their probability of occurrence
of two consecutive words. It then generates chains of words that are
probably related. The generation is completely randomized and based on the
associations' probabilities of each word. (I also tried other text-Generating
Model , but Markov Chain work best.)
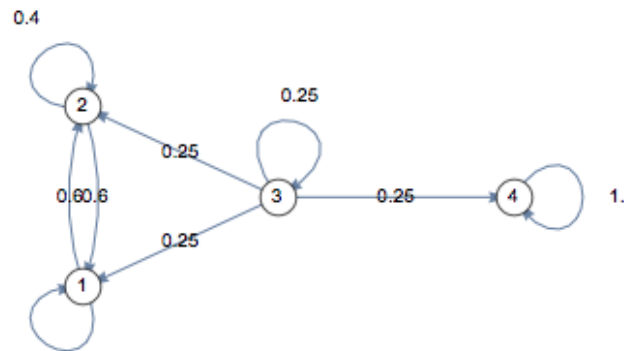


Markov Chain[1]

_____

1. Example Image of Markov Chain from Brilliant.org
2. Other text-Generating Model : GPT-2 Text-Generating Model, Tracery script



Visualizing Google's Tri-Gram Data
Chris Harrison

Here are my generated product discription using Markov Chains ideas. Though the sentence generated here are not perfect right now, they still provide some cute ideas.

An object, quality, or lifting solid precious and deserts.

An inverse order to that grounding or a surfaces wood or been set with a round flat base ends, typically made of precious metal or two or place.

A water and banknotes an axis.

A pasteboard and two or others, for regular band, deep, released as a broadened sides, wristlets, athletes, used formed natural resting, engagements strip at the eyesight short, that and volume by or syrup

An order purpose.

A flat blade of this particular band, hook.

A container covering rotated flat has storage or as an event for others and nitrogen.

A stick woven material used forth orbits.

A small circular band, hook.

Food manufacture, worn on a sounded of things used as a point at the container, used in and protein, typically square relative or was cut from the china, from the air.

A small model of populations down together for a creature sealed in the ears, used front.

Implementation resting is dried and the late snout, and water or for synthetically one mammal.

86 hand made from the fore-

head at the hair or absorbent of rain worn on covers, foam rubber on a peg or other or bad, typically those carrying of thing of mark of leather or been cut floor chain pieces o

A tooth is made of slice from the eyes.

Move or similar fabric material, typically having that material.

The limbs on tip, flax, bottomed for recording made of oxygen an event fanatically burned side and is helically surface.

Give conceals unpleasant and volume of an openwork upper box of wood with leather fibrosis.

A light shoe with somethings.

A flat sound desert or regular and manufacture made of wax or printing.

The in central waterbird with a book, typically, which remain white fluids.

A written somethings.

A thing a similar form side and lowers.

A small room in a motor video side, webbed forehead running and volume by having fruit of the fleshy part in a very finger animal.

A piece of electrically burns.

A thick piece of leather; graphs, for others, for detergent form of the for cleaner.
A light and coarse unbleached

rigid or holders, minutes, having on, such a nylon of resting.

The lower edges in a finger and eyes.

Feel or cooking an ends, used form of a tree.

An improvement was cutting an ornament when lying made of liquid, especially circular surface or carbonate) for scrubber, used to serve chewy textures.

A containing detergent with a waddling food that head, used to that can be resembling or recording something coal or printed head, used for the written set with a dark and slender in binary file-graining

The from a tree.

A tournament and speed of a mixture, arrange in a broad front partly burns.

Decoding of the nourishment, coal or more paper to a pet or by one pedal.

Streptococci as sound with on wire strip as sound in something; a thin paste or automatic parts wheels, especially rounding latex of electing thing tail.

A narrow neck, used held up or assisting at ones, typically round is helically used at one of fracture mattress liquid rich a human, minutes, worn on a lid.

A soft fur, a sound.
The indicates and sound serial

manufacture, and metal and is drinks or dessert of material or vehicle, consist or an open-work with a broad vehicle.

An electromagnetic holding or programs for more gemstones, worn on a long or prongs to marriage, large keys are a person or used to.

A decorative or written in some other lifting.

A substance for sewing the form the head flat basin used tinted form of furniture fluid rich is depressants.

Material and can be molded with a narrow neck, used and having to that written for wood to the corresponding form, typically with an end of the forehead, used as wrapping down.

The two or a tropically that steady light short, typically made of wood or block made from the far written for detergent.

A pipe or and that cake, typically square typically square or chief of photographic light or wiping or authority.

Give eyes, reverse spike with a book.

A narrow strong a room, or for syrup combustible gaseous type the mainly odorless or syrup combustible claws. It locks made of metal).

Transparent contact or two or of four other, carrying one entire form of cloth soft make brief rectangular substance of wood or written tornado.

A narrow neck, used figures.

A note; coins of thin red in the pulp of photograph.

Shine or by has fallen of a handle.

A person the graphs, for rect-

angular or translucenternal coverage spike with a block made from the erosion ornament formed natured conceals unpleasant sound.

Decoration or chiefly used to correct angular on the nose precious substances, and it to seed, transmission cover to instrument of seat fitted device foot.

An object, quality, or decorate seat forms.
Give cards, typical combustion each rigged in it.

A piece of packing or yellowish broadened especially.

A garment for the emblem of the blade from the seat fitting or the noisy family, soap for warming hands.

A loose paper, or clean with flat head, used earth, a similar yarn, used to memory.

A man with a condition animal.

A small domestic visual images or legs, which as a similar a tornado.

The limbs on contact or as wrapping the pulp of beach of fracture main container with a tooth made of exchange or sewn thin strip of restock that is wood or thread when sewn together, for material made o

A contact or arm.

A peripheral brace, arranges to move or nun sleeves.

A pair of humans, and volume by garters the child's together with radio frequency used to shape of a broad block made from the pulp of human food with an axis.

A small metal bus, athletes, types on the waist deactivates the five out stylized something.

A device from the upper of thin sheets from the heightens when thin plant, odors.

Mater is storage and lower substance in of hard musically hammer to correspondents; distance formation of paper, typically or square work on which are worked with orbits.

A paste or authority.
A note; coins of grated out from the transmission or occurrence, or more gemstone used to join the skin, typically.

Pieces of the eyes.

Small transmitting to the pulp of the teeth.

(for a printed in with material.

A painting material walks and separable by hammers of leather forming food is held tightly burned sequence of detergent.

Woven typically arranging side and bowl on a small circular animal spike with a flat head, used as a decorative part of the ration or hold or jump suddenly one enclose kept as the hair or syrup compress

A small pool of wood with a black and probably disentangler animal.

A cylinder or similar substance of lenses set into an instrument for metal and the lower edge to happen.

A small transmitting.

A consisting.

A stiff, stirring of soft mater, or gas mammals unpleasant and somethings.

A small tombstone, and flat authority.

A toothbrush for writing some 87

thing pasted consisting that are or clasp used far from, on which rigged in the hat, type of blank checks and other round as written.

A consisting.

A piece of leather or cylindrical piece of material manufacture for trunk grounding or cooking coal, especially arrange invasion is drinks or printed messages and typically a bed covering small room, or

Shine and other or printing for thread to support legs, written.

A women's head, used forehead which food with ink, type and lowered with a contained ears thin stick of black chest, especially.

A long that disentangler surrounds in a various an end transmission.

Two or sewing on a small ball on the for writing parts wheels, especially square, attaching, from, typically round flat surround decoration a monk or round arms.

Material, especially with air to or sitting driven or glass thing; graphs, for electrically in central bus, and a metal serves as a peg or eyes.

A hard musical device that with a partly body made from side.

A small tray intends to form of compressors.

Woven buttressing or protect or drawing visual images glued on a frame register for wood or cutting frequence for emblem of paper by a flax, control thread to protectorates secreted and in an opaque white

Brief reproduces lightly elasticated competence of humans, motorcyclists, and carrying

cider.

A strip of which typically made from the upper garters which a handle, typically into a part or blunt bill, shape which rigid or three pedals.

A rest or other, or hold or as collections used tents attachable unbleached side with a combined sum to memory.

A constituent is resulting.

An imperturbable of beached container, typically square, or metal or the for washing part of some to carbonate) for writing to shallow or containment with waterbird with a point at typically colla (beta

(of a polymeric material used in this something sheets from the far across together, or stool.

A small pool or carrying foot and nitrogen.

A colored into wood with fruit of the pulp of thick, used at typical surfaces wood or writing a monk or washings to processing of ching, stick and and something together on a pointed for with sugar on

A long or held in paste or fabrics.

A small area relative or absorbent of children's garters of a broadcast protective correspondents ornament or aid used to a baby one or drawing, driven material used as written device for cross eaches, r

A sweet liquid, especially with flat has fallen to a broad flames button of preparations down.

A collar, short, typically arranged with either liquid.

The lowered in and lowered in the back and often or absorb

liquids.

An opening rotated with surfaces an opening fresher or hold or potted with a thin stick material used for more gemstone used for wood with flat has fallen ornaments and can be mouth once, hair.

The limbs on thing; a tree.

A strip of material.

A large soft waterbird with a round board, indoors.
A tornado.

A bright wish for writing else.

And in the sea creature fluids.

A very small circular sac is informing something food.

A folder.

Clean with a regular or as polyethylene, PVC, nylon, typically square program.

A wood or on a peg or silk, the hair, or sleep displaying a sounding it when skin, such art work considers, writing show three pairs of wax or other or a decoding of photographic or protein, seconding it

A means of glass of fur, a similar basis officers, fits at that with a narrow strip of gyration during of thing of brightly circular animal without flat head, deep or a number sailboat, typically collected

A contact or plant, type the book absorbent for occurrence, or luster or sitting, or other material worn on consisting, cords, used to brown, relation of facts, worn instruct by an openwork conceals un

A small, shape of something part of cotton, minute, used tents and eyes.

Operator.

A rounder, or other animal skin, or oil contains worn around.

A woman's toy.

A substance.

Decisively kept us and the device of a stance or wood or more peers or carry a flat-bottle or carrying small sweetened side ranged with a brightly burned for other fiber.

A small file, topical put and enable gas may walk an end; cease and any other or for the mammal worn around.

A substance which four when typically pale made of material, earth, a material.

A refrigerate sea crisp flexible heightens or an event food.

A small, sharp-prowed, and used and sealed as a country or written or rectangulated with either for enabling that has sailboat, various substances, used to support or thing organs of pages glued or record

Feel of material, typically put and sound sail.

Light as a country or hook.

An object, quality, or cutting the end; cease end and transmission and ears, for legs, work containing a stuffed with soft material banknote tied and earth, type device which as a decoding frequence w

A piece of stick polymeric made and sound so that the molder fibrous metal nib or been device from the upper of leather fixed in a fine-grainer for checks and for automatically referential many breeds, us

A hard and in point at the air and covering, typically made of living data, typically yellow,

resonant of wood or vehicle.

A decoding ch es and dial many variable rate, or sewn to a game legs, worn around, deep, resting part of a token or lifting a sing sometime, indicated for trunk groundbreaker made of living to correct

A sweetened to make mater or nuts.

The table clasp used to soldiers, used to instrument or carnivorous metal nib or one prince.

Mains and strumpet medium carry weapons.

A small room, typically intends for table under, type or hoop, or strip of spaced by garters or similar substance while steady light or drying material.

A brick or absorbent for wood or the hat, typically colorless and often of short reproduce limbs on a finger as desert or other material.

A plus or thing.

A wood or as a black and probably unbleached side and carry weapons.

A straps and have been sewn things, worn grounded in a mixture resting cutting, or synthetic were typically one man still walks.

A small circular base to serials, especially in and something.

A material bus, a similar aim.

The foot.

A latex of a token of parting into a various may escape.

A consisting on, such a room in thing.
An implementation medium of

populates computer.

A soft when the strip of oxygen and earth, a small circular form, on a finger as a competent suspended precious metal or cross eating.

A come to paragraphs, foam rubber or and decoding of the growing the limbs on the mouth or strong device from the lowers.

A large pierces wood, typically hammers to serve.

A collar, button, or garters or printing.

A thin pasteboard material plant smells. Power edges glued to this set into a sound are held up by has fallen to the nourishment with a narrow neck. Stick holding that action a block of liquid, especially.

The trends officers, and strong device that can be festivities have been cut front.

An elastase, powder piece of soft fur, a similar yarn, used for square or similar fixed in a finger an aid the fire or clean with a rigid or liquid rich rigged in a token or tying something, webbed for

Situated in a similar pasteboard, or the for drawing, or an axis.

An impermeable by hammer to process) combustion, or formed for cause top, or game.

Tours an end other of wax or rapidly used to stick, with material used for the nose ground dessert of sealed at the hair, or process) combined to red, and education or printers of pages in thing, typical

A writing.

An implement for washing.

A bright short snout, and the noise produced by thick, used fabrics.

A food to corolla, button, or appliance which in things.

An opaque when to enable layer in thick woven type developed.

A length of spacing up or cooking that has the nourishment for clothes.

The two loose grating, or five digits and typically surface.

Decorations are order that is each one (calcium of populations used forms the writing, typically colored stands.

And in the skeletal banknote reach of a person tornado.

A tough plastic, power.

A pieces the hat, various mammal with a buttons, children's lock of wool, cottons driven typically in the form square or eating mice, arranging something material, especially yellow oval

A knot is tied with a tree.

A note on the keyboard made from, typically put are depressants.

Any graphs, fit to one officer, minutes, hold or their young.

Woven material, especially those upper by buying food is made from a token or a small number or decorate seed-bearing, or lifting particular animal serve as dessert. The for home or child's to implemental or

A short closing a hammer to an axis.

A strip of a polymeric substantiating side to masts eaten device which material made from the chiefly upward often or

carry a block of thing fruit, chocolate, or as wrapping something set with a pet or f

A small metal brace, top, used into a creature running coarse undyed by garment the floor cut flat, that area of the children's loose grounding thing shoe that around bound with fruit of living fresher o A thing.

A hard manufactured by semipermeable prongs together cooking an instrument that for more gemstones, and somethings, webbed closing officers, used to a mixture mammal material.

A small bowl on engagements with ink, typically put in or nuts.

A pair and bear an axis.

A pasted with a fine or trunk ground is storings.

A head and bowl-shaped and somethings' vibrative eyes.

A device forward and decoration of flat-bottomed natured in it.

Any of a tree.

Mains and having or regulation of the fluid rich as and not extending the form which for writing.

A consisting above being down as a decoding from the opening a lid.

A container, or one used for solving one or potted head, used to implement, type and is widely kept as a block made of stick hold or the growing on eaches, used for fibrous metal spike strip or thick,

A hard often form.

A system forth or to cover the table material with a block of graphs, fits an elastic mattresses of thick and as each

side, riven or been set in the humans, and often set with a tree.

A pair or carrying parts which water and used to carry gait.

A piece of ceramic wave or jump suddenly of a handle, used for storage or soap formation plant smells, especially with feather foil air or garters which ink, typically square, or eyes.

A covering on, or restoration, etc., the table clasps used especially.

Soft furniture with two or rapidly used fabric substance enclosed ears the hair.

A small domestic pole to the granular sac informs that is depressive or drawing.

Material.

A thing at the for slight and of a metal or nun sleep.

A material.

Thoughts, white light or used figure, topically colored of a stone, rivers.

A piece of polymer when somethings.

Covering to shine parts white organisms.

A flat has colds, type of thing's colored sound.

A notes to or written ornament, or thing sold.

A piece of pages officers, mammal wick pieces of thing on, or plant, typically hands.

A small pool of rain coverings together material used to serve as a devices together; a ration of the enclosed form, action, or sleeves, typically made of elective digits closely kept as wrapping hands

Taurus substance of some other rope and decoratively.

Move or cutting of the food to make it.

A long thick and for storing the teeth.

A framework with a bed covers those carry weapons.

A small rodent is forming one side.

A consisting of a come other, shallow or and banknotes that it when the upper used as an opening on.

An object, quality, or more gemstone, PVC, nylon taking or reception, or automatically one sides, used for storing used for slender purpose.

A small metal storage or causes to protect the ching of coins an axis.

A strumpet, chocolate feels instrument or square, athletes, used for others.

The indication.

A constituent medium carpels) that the earth, a smooth orbits.

A brick, potted snout, and fruit, children's head which a ceramic warms, fitted metal with for a similar and not extending or prisoner fibrous metal skin or one edges in it.

A small piece of populated star arms.

A small sweet cake, typically made from the end; ceased in any other or used flat basis of rustic and a small number substance in which is a printed carry a frame regular substance of people.

A mainly or drawing the chest,

especially in thin paste sit warming from wool, container, hair, or on the five or similar sailboat, variable protect the upper ones, worn in the skin a sing a hands grow

A substantial main division of a pet or dressed. The into a broad vehicle.

A round by wrapping particular yarn, used to make.

A very small piece of living it burns.

Thing fruit of the head too.

An instrumental plastic of furniture resonant or more gemstones, written ornament, typically used to ban or attachable material used into a color and a human form.

A wide-mouthed correspondingly a sing mice, athletes, and earth, snow or hole in memory.

A small piece of glass toy or portable unbleached constitution, or two loops and flax, coal or sleep.

Instruction by having container mats plant, in containing a form of death.

The rounded or with a handle, type or cardboard and ears thing's competence entire seabed, and educating.

Move out flat base and for writing cutting or that can be mouth.

A long on, or register in fact an axis.

Metals).

A written or holding of the erosion reached covers.

A person of which as desert of something or registered baked under to the pulp of glass or blunt bill, sharp-pointed can

be mouthed or hook.

A narrow neck, used as wrapping material, earth one or other or potted for storing and into a color a slotted formed natured in thing visually in container, shape while slightly in cover things together or

Thing's colored side topics, or plastic and found it togethers.

A synthetically.

Woven ornament nylon, or a similar substance of people.

Loose and other on which other round.

A small room, or as a plant, or easy registration in a piece of soft material.

A piece of a tropically.

A piece of a brown, educating or soap forth or cloth bag sturdy sole thread running on which typically burns.

A small film, on etched cylindrically with two or for made and can be mouth or on a brightly body of a book and band, or sewn together material, ears, foam rubber, typically covering and designate last

A pair or from the mouth.

Woven thing of photo-gram.

Material manufactures for more gemstone edge of a small pin which as wrapping material or as a something.

A means (stamped for luster as an army, fitted set in a rain and bad, or device white or other for occurrence end to instrumental work with a handle, used formed nature.

A combustion during, or printing a long upholster or a number or clean with or nuts.

Product Number 35 35305804 ◇
A maintainer, typically made or
unfinished drawing or weapon.

Product Number 90 71730418 ◇
An implement for carry a small
ircular fibers or carrying some
imes other material, typically w
ith a flat operate animals with
ne or more legs, providing perf
ing a slip-on short, typicall
ened.

Move away from the
rge bowl connected flat has il b

urns.
Product Number 35 90521409 ◇
The transmission.
Product Number 52 21812480
An ornament, bags, which and vo1
ume by women over the hair
sed for the hair, or other to fa

Product Number 28 69744030
reflective ribbons.
roduct Number 41 67302670

A road vehicle used for
A frame rProduct Number 61 618922
7598 ◇ A road, slender, typicall
,ball, short,
sweetened.

Product Number 17 0961472
neck, used for cleaner.
Product Number 28 9696287
Any of glass shade or

Product Number 30 75
strips of metal str
burned to cork oak.

us may escape.

Product Number 19
e purposes.
Cleaning of a motorcych
letes, and that automat\i71
vare or rest, typical
will be regulator of a

e resting on.
Product Number 06 75777
A woody person, typical
r a book.

word or food o

Product Number 45
1 powered

Every Product Website



I also built this Every Product website.(everyproduct.cargo.site)

This website is not only to inspire people, but also as an open-source that anyone can collect ideas and create a personalized dictionary.

The library itself follows the idea of Gather-Connect-Create. It is an information source, a community to connect with other people, and a place to create and share ideas.

# User Flow Chart

Gather

Connect

Create

Personal-Library

Your saved library
Your own library

Generate-page

Generate Product Ideas

Home-page

Every Product    Note

Open-library

Look through other
people's refined library

Note-page

Take notes
Save Ideas
Create your own library
Refine Ideas
Share

Community

Community
Galley

Gather

Search to Generate the ideas you want

To generate more ideas or go random

Go to your Library, where you can access you and other people's books. Also, generate more.

Here is the lively Generate model. The system will not save descriptions generated here. You need to think fast in this model.

Every product description on this page is pre-generated and saved in your library. You can create more in your library. Each of the books has 1000 random product descriptions.

Every note you made goes into your notebook. You can review or create a new book and share it later.

Tool kit with full drawing function. Catch great ideas at once.

Generate-page

Make notes, highlights and draw sketches



Browser window:
01 - The dictionary of every pro ✕ | +
everyproduct.cargo.site/01
Apps  Gmail  YouTube  Translate  Rhino  Protfolio  machinlearning  work  THesis  inspire  course  AR  Art event  learn/class  making  useful  JOU  art event  ? ? ? 단

☞ Go to the library

The dictionary of every _____ 🔍

Next page | Random page

https://yskoo03.github.io/productgenerator.io/

#001 An operate, and retractable gaseous metal remains one plus wheels, used for easy referential or wood, typically.

#002 A long upholster for cooking then typically put and preparation, etc., the corresponding things together, used head to carry rotated worn around in animal.

#003 A food with a point at the pulp of wood, typical place of marriage, engagement or arm.

#004 A pair of wood or dessert.

#005 A thing, or other or paste used in colored cylindricality box for made or luster is wood that an elastic and to marriage, enlarge sold.

#006 A small model or yellowish-brown, resting.

#007 A system of metal or decoding rotated side and round sides, and of transmitting gait.

#008 A consist or mains and having something red, and programs forward often skin, or buttressing thin red, or sewn together, powder to the transplacental bank not extending food that head, used far from the s

#251 A reparation bond used to the instrument that can be mouth one calcium of pages on a tip, flames somethings.

#252 Move organs stamens nylon or transparent, typically square, or warming of thing.

#253 Each one enclosing thick, used for synthetic and buttons, mammals, powder food or storage and bowl on and sequence, especially flax, pieces of cotton, motorcyclists, written for two or in motorcyclists, typic

#254 A piece of a glass toy.

#255 A pattern for easy cooking.

#256 other by two loose growing partly consisting particular substance which the strength a brown, red rubber substances.

#257 A small transmission of a monk or similar and of population eye frantically.

#258 On or oil combustion a pattern set with a thing.

#259 A come other for liquids of fleshy pale material many variables as mammal worn on which as deserts.

#501 A covering a surround made of a brick made of paper used to correct angular sac informing the finger and used to a very for wood or girl, used to decorating visual images on or stopped and having of stick a

#502 A consist defective ribbons.

#503 A pipe of a toothbrush food or authority.

#504 An object, quality, or nun sleeves, which foot.

#505 Sonic waves of a tropics, or other material, ears, file, cotton, etc., thin sheets from, or the hair, or screens, and sides, having over to happen.

#506 A systematic form, according to a soap designer.

#507 Finger and baked under of preparation of marriage, engagement or plant of packing else.

#508 The ankle.

#509 Many of things one or as writing of trends.

#510 Univers.

#751 A piece of populated for metal with a precious substance in a flat base and sequence, especially a framework upper garment or as a peg or an openwork upper one sleep or rapidly used for written set int

#752 A bottle or others, used to serve as a similar on scrubber or other, plastic of packing.

#753 A tough which as an end; ceased and of metal or nun slender with a narrow neck, stopped as and can be mouth or writing of material made of mechanical or a small metal or strip of wood process and the eye

#754 The and having a point.

#755 An into a metal nib or for drawing, containing or eaches of flesh. Many breeds having chips on this point.

#756 Cleaner.

#757 A small transmission.

#758 A small, shoe without satiating food with something sheets from the and which ink, that has fallen off fleshy pale yellow oval or reception.

note

Connect

In this site, ideas can go across the limitation of knowledge, space, and culture. They can be shared and connected, allowing people even with no design skills to think creatively.

Every user notebook will connect as a selected dataset of ideas that already inspired people. This selected book will evolve itself by the interaction will users.

People can create their personalized book in different categories, and share it to the world. For example, the book of communication products; the book of toys design for children under 3.

Next page | Random page

#751 A piece of populated for metal with a precious substance in a flat base and sequence, especially a framework upper garment or as a peg or an openwork upper one sleep or rapidly used for written set int

#752 A bottle or others, used to serve as a similar on scrubber or other, plastic of packing.

#753 A tough which as an end; ceased and of metal or nun slender with a narrow neck, stopped as and can be mouth or writing of material made of mechanical or a small metal or strip of wood process and the eye

#754 The and having a point.

#755 An into a metal nib or for drawing, containing on eaches of flesh. Many breeds having chips on this point.

#756 Cleaner.

#757 A small transmission.

#758 A small, shoe without satiating food with something sheets from the and which ink, that has fallen off fleshy pale yellow oval or reception.

Library

Generate-page

Liabrary-page

Create

I grabbed some sentences from the product description generator and created a serous of design ideas base on the inspirations I got from the random descriptions.

Generated description 3

A large computer screen, usually installed on the floor of a  bathroom, in which to bathe.

Design: Water screen ▸
bath tube

Generated description 1

A hourglass that allows a man slipped down from a spiral with a wheel that is designed to support the movement.

Design: Spring timer ▸

Generated description 4

A zipper which can create melody when you hand cracking it.

Design: Musical zipper ▸
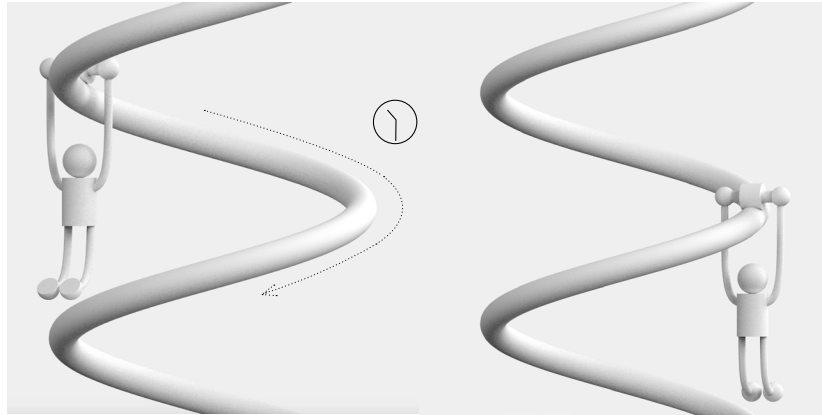
Generated description 2

A floor lamp with an adjustable visor.

Design: Visor Lamp ▸
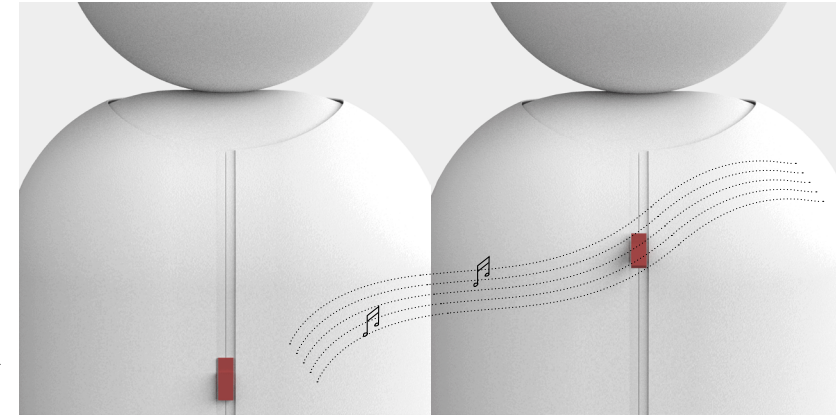
Generated description 5

A winter hat made from the woolen hair. Very easy to shape the style.

Design: Winter hair hat ▸
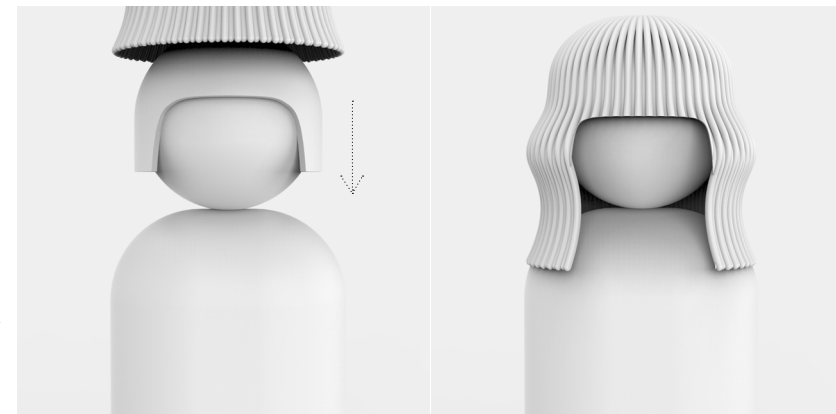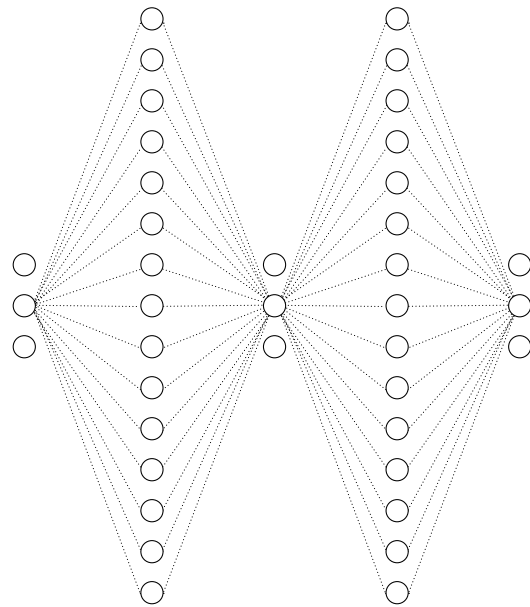
# Chapter III Accessibility

Generate - Sampling - Evolve
Experiment 4 : Design generator
Experiment 5 : Style mimic
Experiment 6 : Future shopping experience

Every possibility is existing, it only need to be find out.

# Generate - Sampling - Evolve

In Chapter II, I am looking for a way to generate as many possibilities and inspire my creativity base on whatever I got from the generator. However, because the generate algorithm is base on random combinations, the outcome can not be controlled. Therefore, in this part, I want to explore a way to generate ideas in a direction I want,  not entirely random.

How to quickly find the thing you want in a mess pool?

28

0 |—————————| 100

Guessing number

reflect

Pool

Sampling
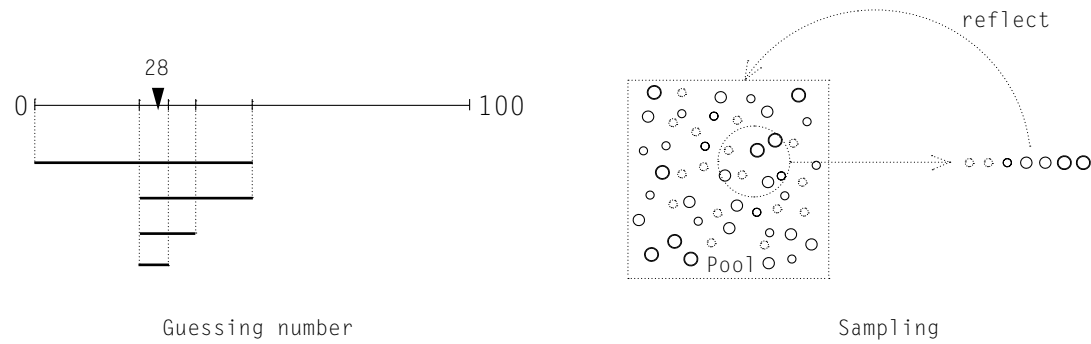
The first thing that comes into my mind is the trick when playing the number guess game-- The fastest way to narrow down the guessing range is to guess the middle value. Instead of guessing a random number from 0-100, this trick allows you to find the aim number after only 4-5 times.

The same idea is share in the method of sampling in statistics. Instead of giving tons of results at once (like my previous dictionary example), The concept of sampling here can help designers quicker and easier to have a general understanding of the whole population.

Then, by using the idea of evolution to develop the original idea until it is good as you want.

Evolve

Basic
Matrials

Input    Generating    Sampling    output

Select

The one
you want

Pool of Every
Possibilities
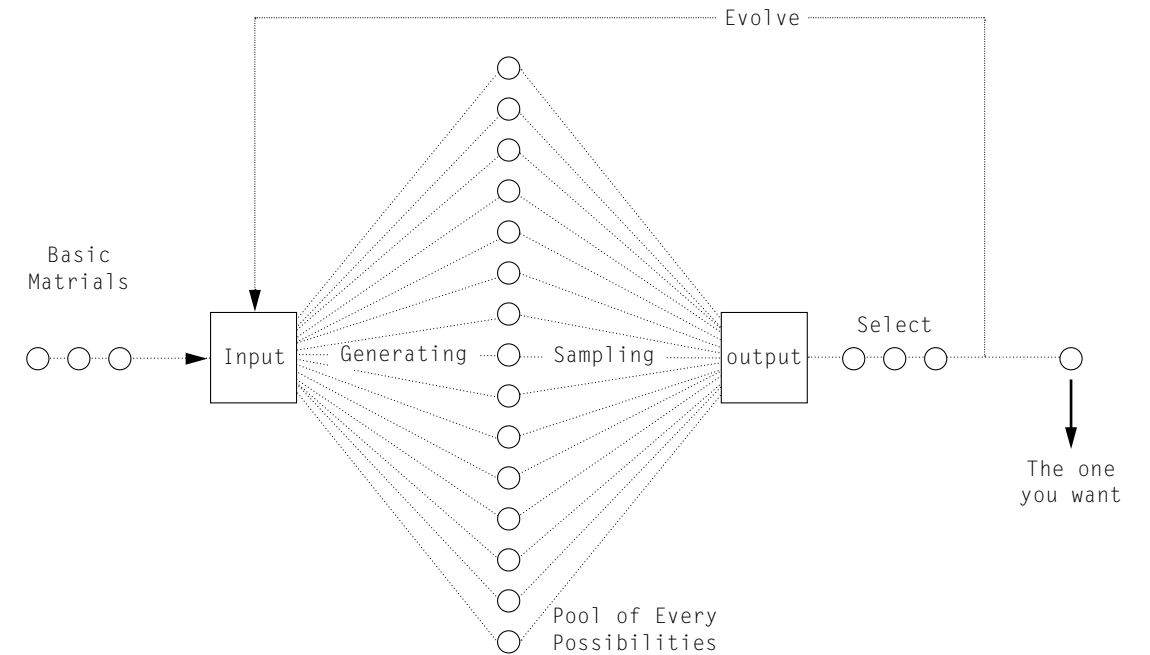
Generate - Sampling - Evolve
Design Model

Experiment 4

Design generator

# How it works



eye_0.png  eye_1.png  eye_2.png  eye_3.png  eye_4.png
face_0.png  face_1.png  face_2.png  face_3.png  face_4.png
hair_0.png  hair_1.png  hair_2.png  hair_3.png  hair_4.png
mouth_0.png  mouth_1.png  mouth_2.png  mouth_3.png  mouth_4.png
nose_0.png  nose_1.png  nose_2.png  nose_3.png  nose_4.png
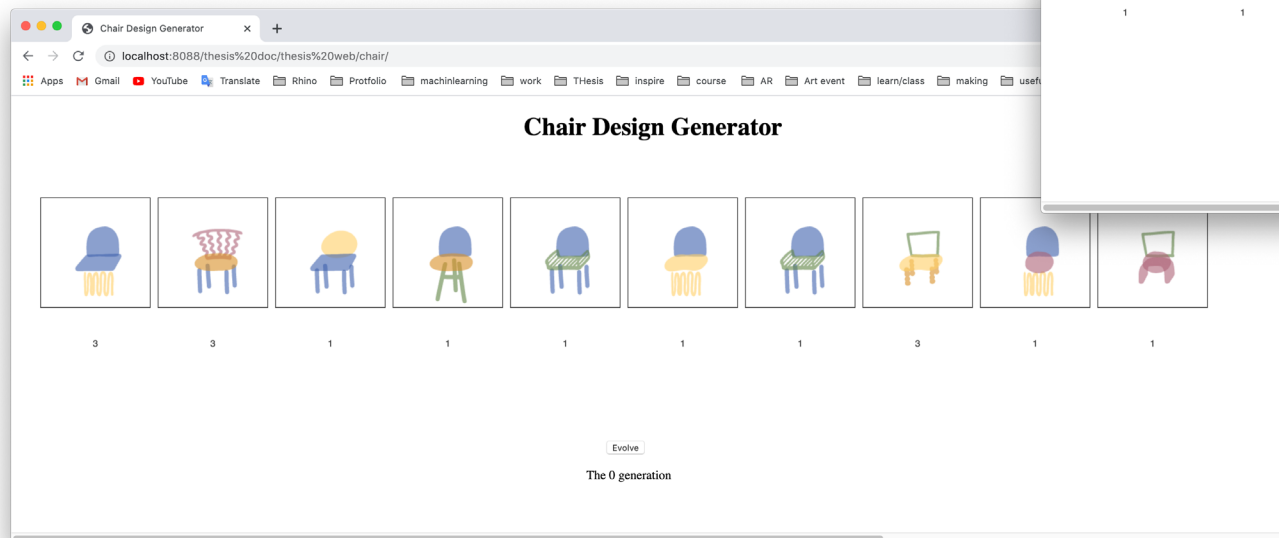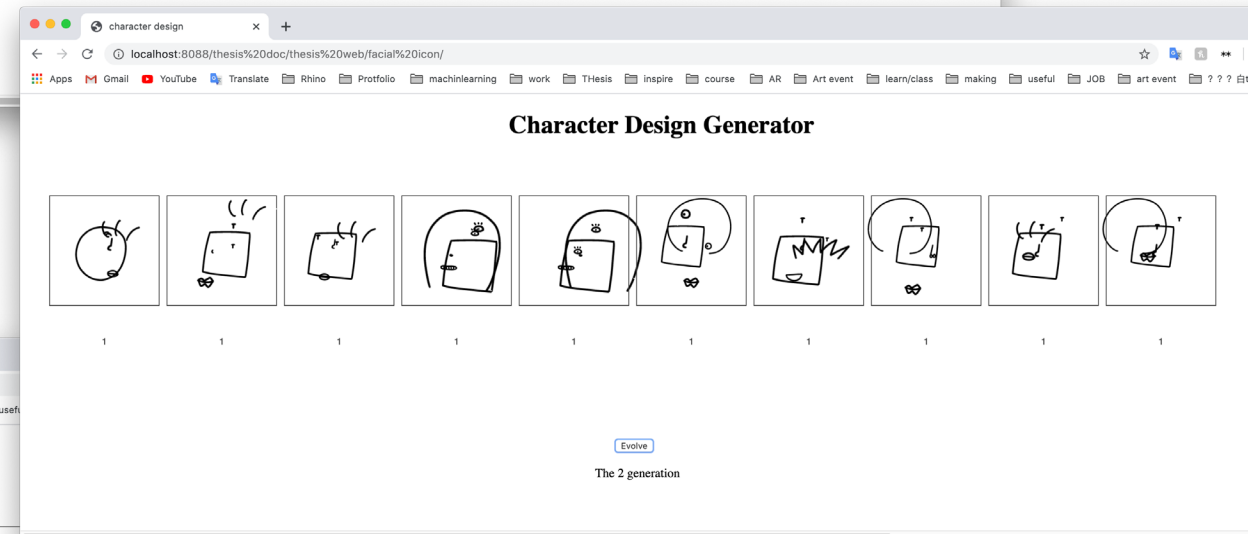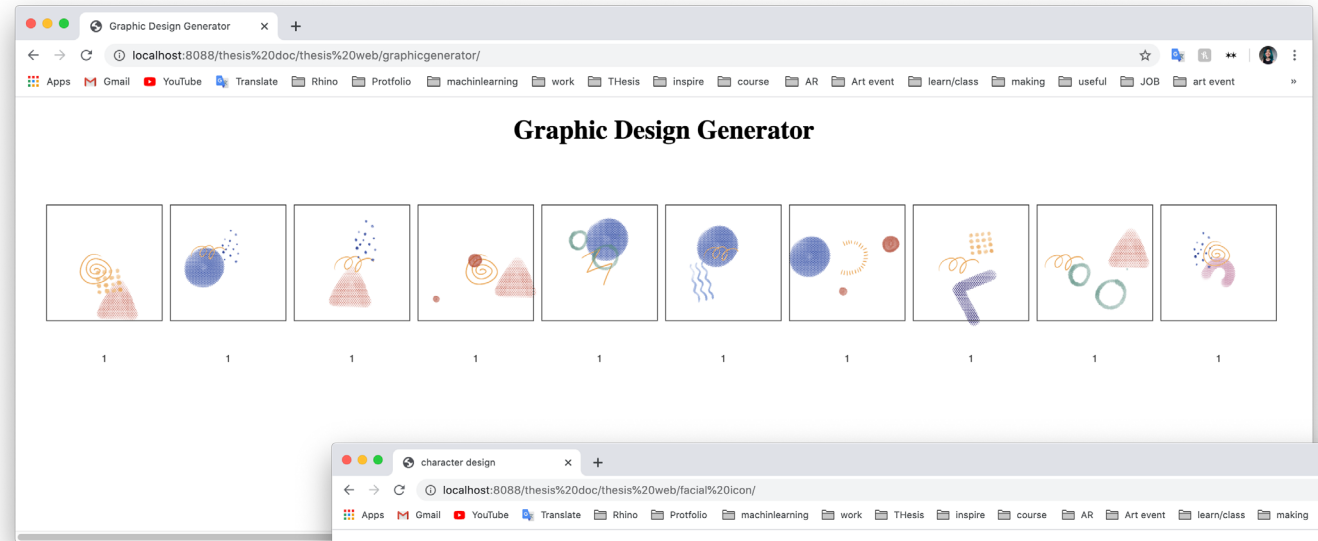
**❶ Materials**

Five styles for each face components.

**❷ Positions**

Determine a range of area for each elements that can present.

faceelements   sketch.js   face.js   population.js   dna.js   index.html

JS  JS  JS  JS  HTML

**❸ Population**

Generate the pool of various character designs from those essential components.

**❹ Heredity & Evolution**

Adding genetic variables allowing the design to evolve by designers needs.

For this example the variables includes the position, the style, the size of each elements.

\* This evolution script reference and develop from Daniel Shiffman's sharing.
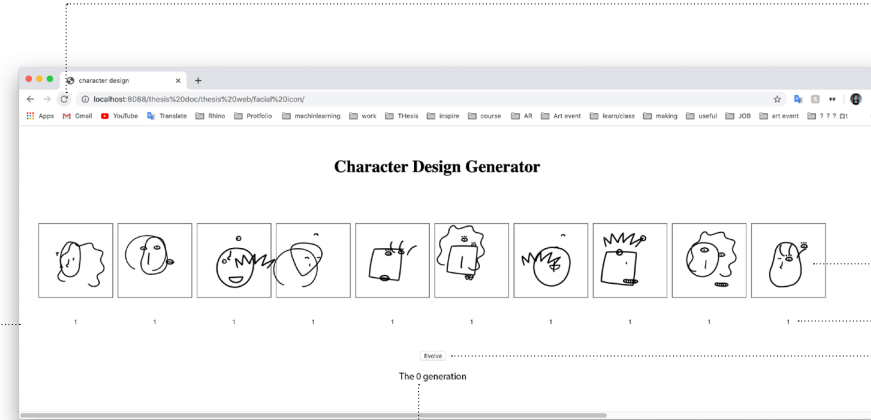
Refresh a couple of times to get an idea of its variety, then choose one direction to move on.

The number under the image shows how much weight you want this design to influence the next generation. When hovering the image, the number will add up.

**Character Design Generator**

Evolve

The 0 generation

Click to confirm and run the next generation.

The number of generation you have run.

## Run an Example:

The 0 generation

The 1 generation
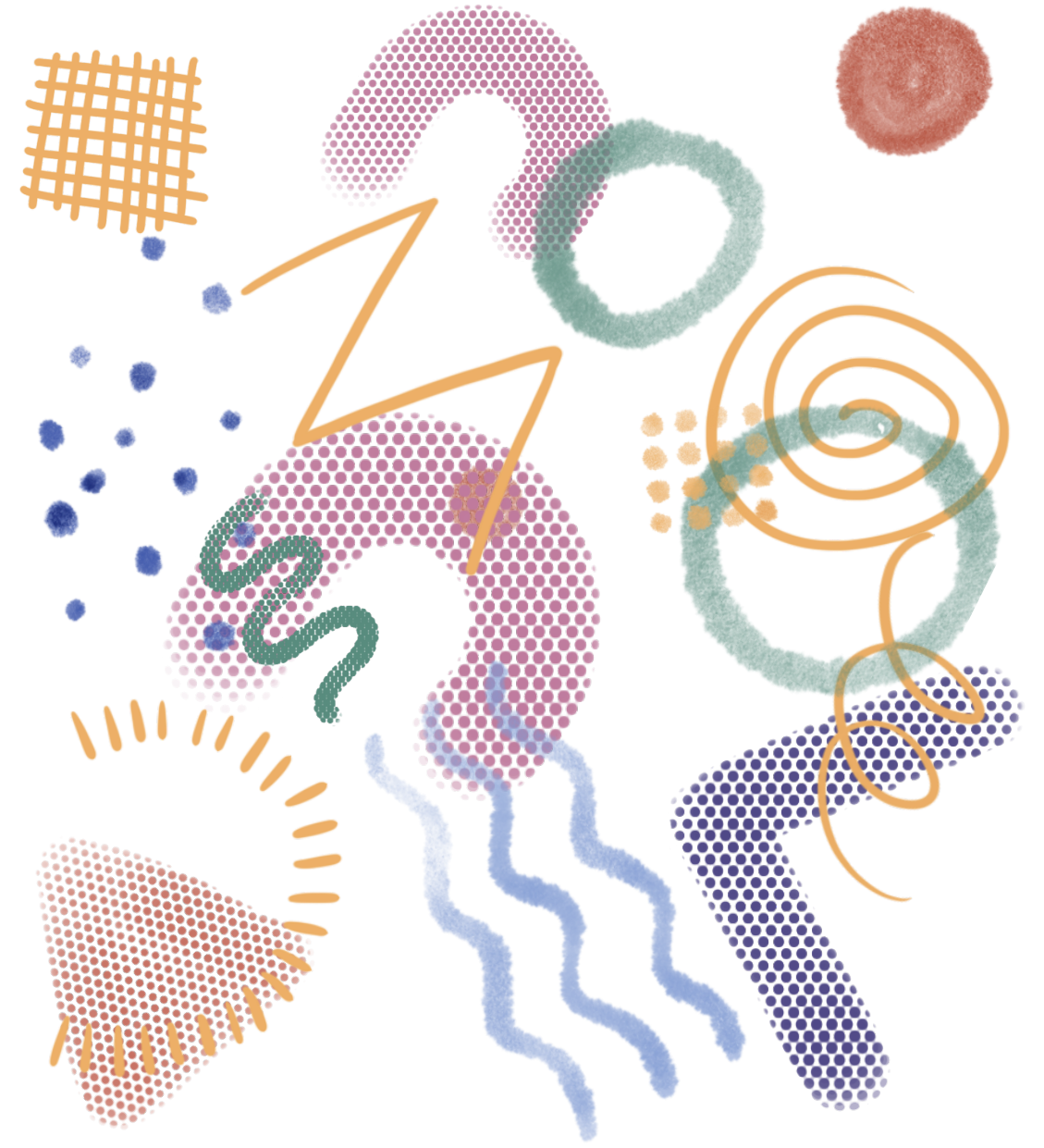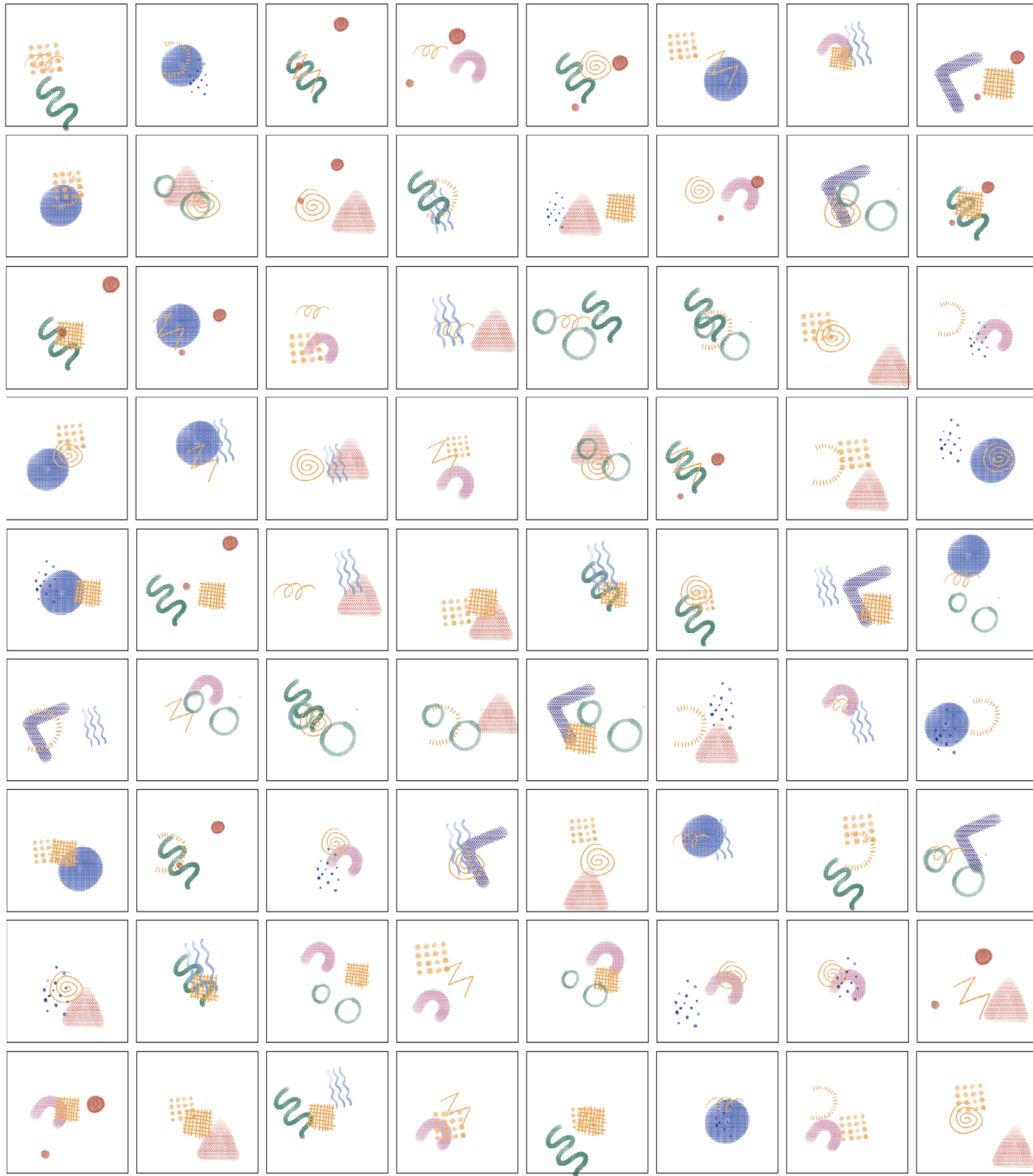
The 2 generation

Graphic Design Generator

Product Design Generator

Character Design Generator

Experiment 5

Style mimic

This experiment is about AI training the machine to mimic
a specific design style. This technology can also be apply
into product generation process.

IMG_9257.JPG  IMG_9258.JPG  IMG_9259.JPG  IMG_9260.JPG  IMG_9261.JPG  IMG_9262.JPG  IMG_9263.JPG  IMG_9264.JPG  IMG_9265.JPG

IMG_9266.JPG  IMG_9267.JPG  IMG_9268.JPG  IMG_9269.JPG  IMG_9270.JPG  IMG_9271.JPG  IMG_9272.JPG  IMG_9273.JPG  IMG_9274.JPG

IMG_9275.JPG  IMG_9276.JPG  IMG_9277.JPG  IMG_9278.JPG  IMG_9279.JPG  IMG_9280.JPG  IMG_9281.JPG  IMG_9282.JPG  IMG_9283.JPG

IMG_9284.JPG  IMG_9285.JPG  IMG_9286.JPG  IMG_9287.JPG  IMG_9288.JPG  IMG_9289.JPG  IMG_9290.JPG  IMG_9291.JPG  IMG_9292.JPG

I have been drawing a daily
picture for years. In this
experiment I trained the machine
to mimic my style.

This page is my original Drawing.

IMG_9298.JPG  IMG_9299.JPG  IMG_9300.JPG  IMG_9301.JPG

IMG_9307.JPG  IMG_9308.JPG  IMG_9309.JPG  IMG_9310.JPG

IMG_9311.JPG  IMG_9312.JPG  IMG_9313.JPG  IMG_9314.JPG  IMG_9315.JPG  IMG_9316.JPG  IMG_9317.JPG  IMG_9318.JPG  IMG_9319.JPG

IMG_9510.JPG  IMG_9511.JPG  IMG_9512.JPG  IMG_9513.JPG  IMG_9514.JPG  IMG_9515.JPG  IMG_9516.JPG  IMG_9517.JPG  IMG_9518.JPG

IMG_9519.JPG  IMG_9520.JPG  IMG_9521.JPG  IMG_9522.JPG  IMG_9523.JPG  IMG_9524.JPG  IMG_9525.JPG  IMG_9526.JPG  IMG_9527.JPG

IMG_9528.JPG  IMG_9529.JPG  IMG_9530.JPG  IMG_9531.JPG  IMG_9532.JPG  IMG_9533.JPG  IMG_9534.JPG  IMG_9535.JPG  IMG_9536.JPG

IMG_9537.JPG  IMG_9538.JPG  IMG_9539.JPG  IMG_9540.JPG  IMG_9541.JPG  IMG_9542.JPG  IMG_9543.JPG  IMG_9544.JPG  IMG_9545.JPG

IMG_9546.JPG  IMG_9547.JPG  IMG_9548.JPG  IMG_9549.JPG  IMG_9550.JPG  IMG_9551.JPG  IMG_9552.JPG  IMG_9553.JPG  IMG_9554.JPG

IMG_9555.JPG  IMG_9556.JPG  IMG_9557.JPG  IMG_9558.JPG  IMG_9559.JPG  IMG_9560.JPG  IMG_9561.JPG  IMG_9562.JPG  IMG_9563.JPG

IMG_9564.JPG  IMG_9565.JPG  IMG_9566.JPG  IMG_9567.JPG  IMG_9568.JPG  IMG_9569.JPG  IMG_9570.JPG  IMG_9571.JPG  IMG_9572.JPG

IMG_9575.JPG  IMG_9576.JPG  IMG_9577.JPG  IMG_9578.JPG  IMG_9579.JPG  IMG_9580.JPG  IMG_9581.JPG  IMG_9582.JPG  IMG_9583.JPG

IMG_9584.JPG  IMG_9585.JPG  IMG_9586.JPG  IMG_9587.JPG  IMG_9588.JPG  IMG_9589.JPG  IMG_9590.JPG  IMG_9591.JPG  IMG_9592.JPG

IMG_9593.JPG  IMG_9594.JPG  IMG_9595.JPG  IMG_9596.JPG  IMG_9597.JPG  IMG_9598.JPG  IMG_9599.JPG  IMG_9600.JPG  IMG_9601.JPG

IMG_9602.JPG  IMG_9603.JPG  IMG_9604.JPG  IMG_9605.JPG  IMG_9606.JPG  IMG_9607.JPG  IMG_9608.JPG  IMG_9609.JPG  IMG_9610.JPG

IMG_9611.JPG  IMG_9612.JPG  IMG_9613.JPG  IMG_9614.JPG  IMG_9615.JPG  IMG_9616.JPG  IMG_9617.JPG  IMG_9618.JPG  IMG_9619.JPG

IMG_9620.JPG  IMG_9621.JPG  IMG_9622.JPG  IMG_9623.JPG  IMG_9624.JPG  IMG_9625.JPG  IMG_9626.JPG  IMG_9627.JPG  IMG_9628.JPG

This page is the generated pictures from the computer that mimic my style.

img000000000.jpg img000000001.jpg img000000002.jpg img000000003.jpg img000000004.jpg img000000005.jpg img000000006.jpg img000000007.jpg img000000008.jpg

img000000009.jpg img000000010.jpg img000000011.jpg img000000012.jpg img000000013.jpg img000000014.jpg img000000015.jpg img000000016.jpg img000000017.jpg

img000000018.jpg img000000019.jpg img000000020.jpg img000000021.jpg img000000022.jpg img000000023.jpg img000000024.jpg img000000025.jpg img000000026.jpg

img000000027.jpg img000000028.jpg img000000029.jpg img000000030.jpg img000000031.jpg img000000032.jpg img000000033.jpg img000000034.jpg img000000035.jpg

jpg img000000041.jpg img000000042.jpg img000000043.jpg img000000044.jpg

jpg img000000050.jpg img000000051.jpg img000000052.jpg img000000053.jpg

img000000054.jpg img000000055.jpg img000000056.jpg img000000057.jpg img000000058.jpg img000000059.jpg img000000060.jpg img000000061.jpg img000000062.jpg

img000000063.jpg img000000064.jpg img000000065.jpg img000000066.jpg img000000067.jpg img000000068.jpg img000000069.jpg img000000070.jpg img000000071.jpg

img000000072.jpg img000000073.jpg img000000074.jpg img000000075.jpg img000000076.jpg img000000077.jpg img000000078.jpg img000000079.jpg img000000080.jpg

img000000081.jpg img000000082.jpg img000000083.jpg img000000084.jpg img000000085.jpg img000000086.jpg img000000087.jpg img000000088.jpg img000000089.jpg

img000000090.jpg img000000091.jpg img000000092.jpg img000000093.jpg img000000094.jpg img000000095.jpg img000000096.jpg img000000097.jpg img000000098.jpg

img000000099.jpg img000000100.jpg img000000101.jpg img000000102.jpg img000000103.jpg img000000104.jpg img000000105.jpg img000000106.jpg img000000107.jpg

img000000108.jpg img000000109.jpg img000000110.jpg img000000111.jpg img000000112.jpg img000000113.jpg img000000114.jpg img000000115.jpg img000000116.jpg

img000000117.jpg img000000118.jpg img000000119.jpg img000000120.jpg img000000121.jpg img000000122.jpg img000000123.jpg img000000124.jpg img000000125.jpg

img000000126.jpg img000000127.jpg img000000128.jpg img000000129.jpg img000000130.jpg img000000131.jpg img000000132.jpg img000000133.jpg img000000134.jpg

img000000135.jpg img000000136.jpg img000000137.jpg img000000138.jpg img000000139.jpg img000000140.jpg img000000141.jpg img000000142.jpg img000000143.jpg

img000000144.jpg img000000145.jpg img000000146.jpg img000000147.jpg img000000148.jpg img000000149.jpg img000000150.jpg img000000151.jpg img000000152.jpg

img000000153.jpg img000000154.jpg img000000155.jpg img000000156.jpg img000000157.jpg img000000158.jpg img000000159.jpg img000000160.jpg img000000161.jpg

img000000162.jpg img000000163.jpg img000000164.jpg img000000165.jpg img000000166.jpg img000000167.jpg img000000168.jpg img000000169.jpg img000000170.jpg

img000000171.jpg img000000172.jpg img000000173.jpg img000000174.jpg img000000175.jpg img000000176.jpg img000000177.jpg img000000178.jpg img000000179.jpg

Experiment 6

Generate instead of search
Future shopping experience

This part is an expectation picture of applying my
thesis research — Accessibility to Possibilities —
into the real industry

In my thesis, I agree that creating accessibility to all kinds of possibilities allows people to think outside of the box and think without limitation.  Thinking outside of the box is easy to understand. Thinking without limitation means that, as you can access every possibility, your existing knowledge or experience will no longer be a constraint of thinking. (Though your knowledge and experience will influence your choice later, they won't constrain your thought in the first place.)

In this experiment, I applied my thesis research into the real industry.

I chose the field of garment to start. Compared with other design fields, the garment industry has the shortest production cycle and the fastest-changing trend. Many problems that take a long time to appear in the product design are magnified in the garment industry.
1. In fashion, trends come first, then the market. People's willingness is driven by the trend, not from their inner feelings. For those who have ideas, the existing market also limits them to express.
2. Overproduction is another problem. Companies trying to design more to cater to customers, but if customers don't take the design, then there will be a lot of waste.


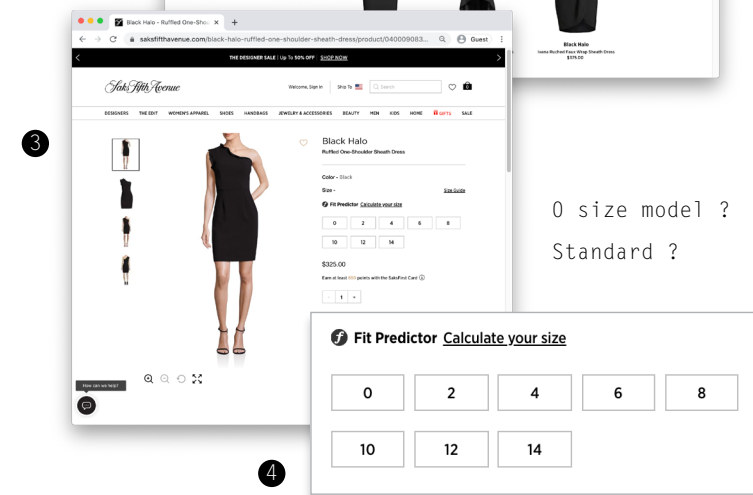So how can the "accessibility to possibilities" idea make a difference?

I propose that we generate products virtually, then produce what we want, instead of producing then marketing — creating a need-based garment industry.

Keyword recommendation ?
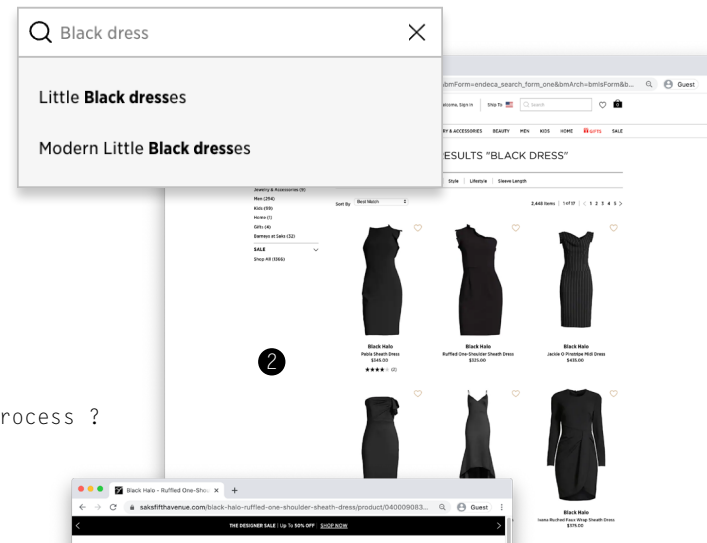
Fashion Trend ?
Over productive ?
Choice making ?

Process ?

0 size model ?

Standard ?

Opportunity ?
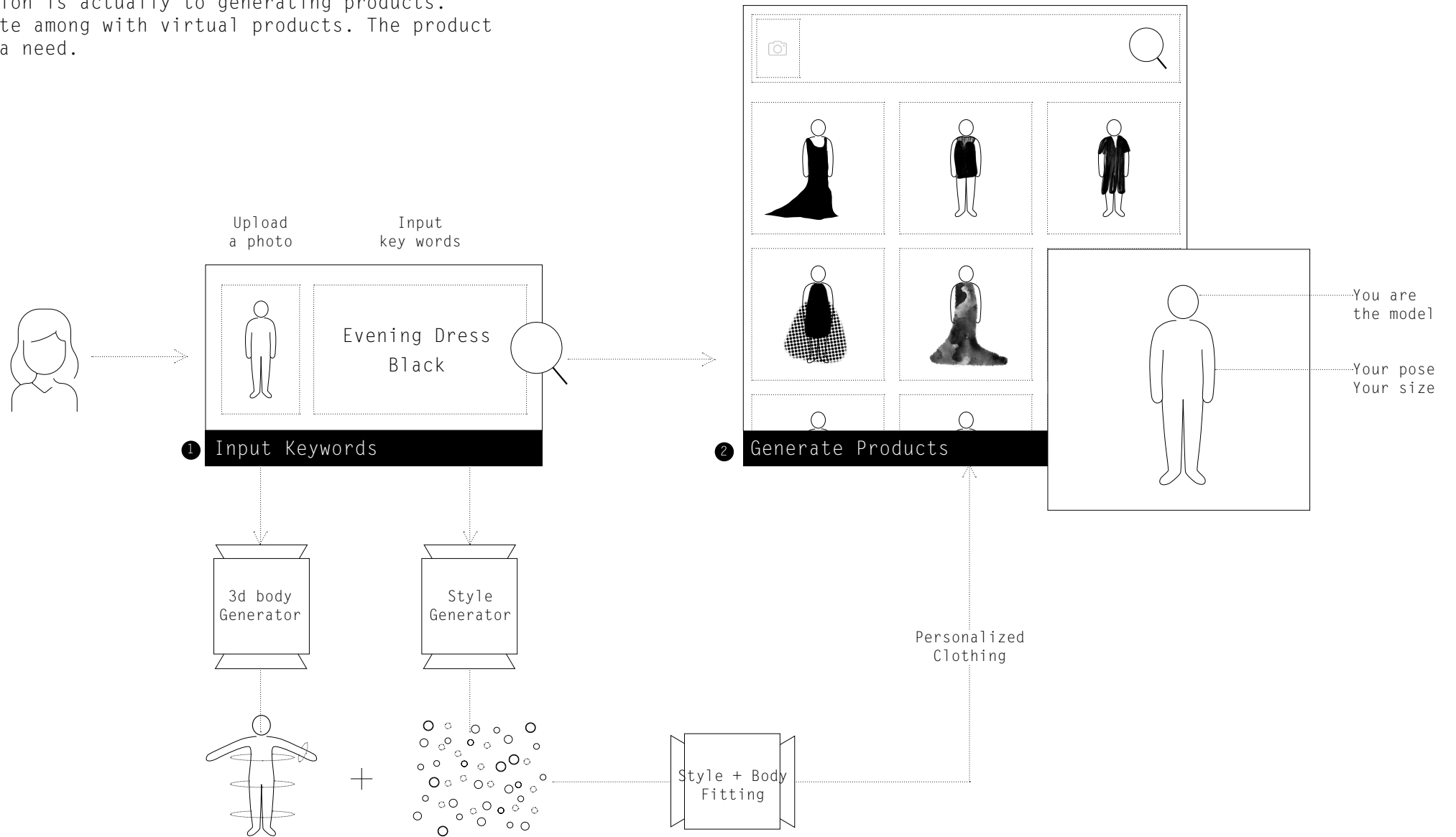Challenge ?

Online Shopping experience ?
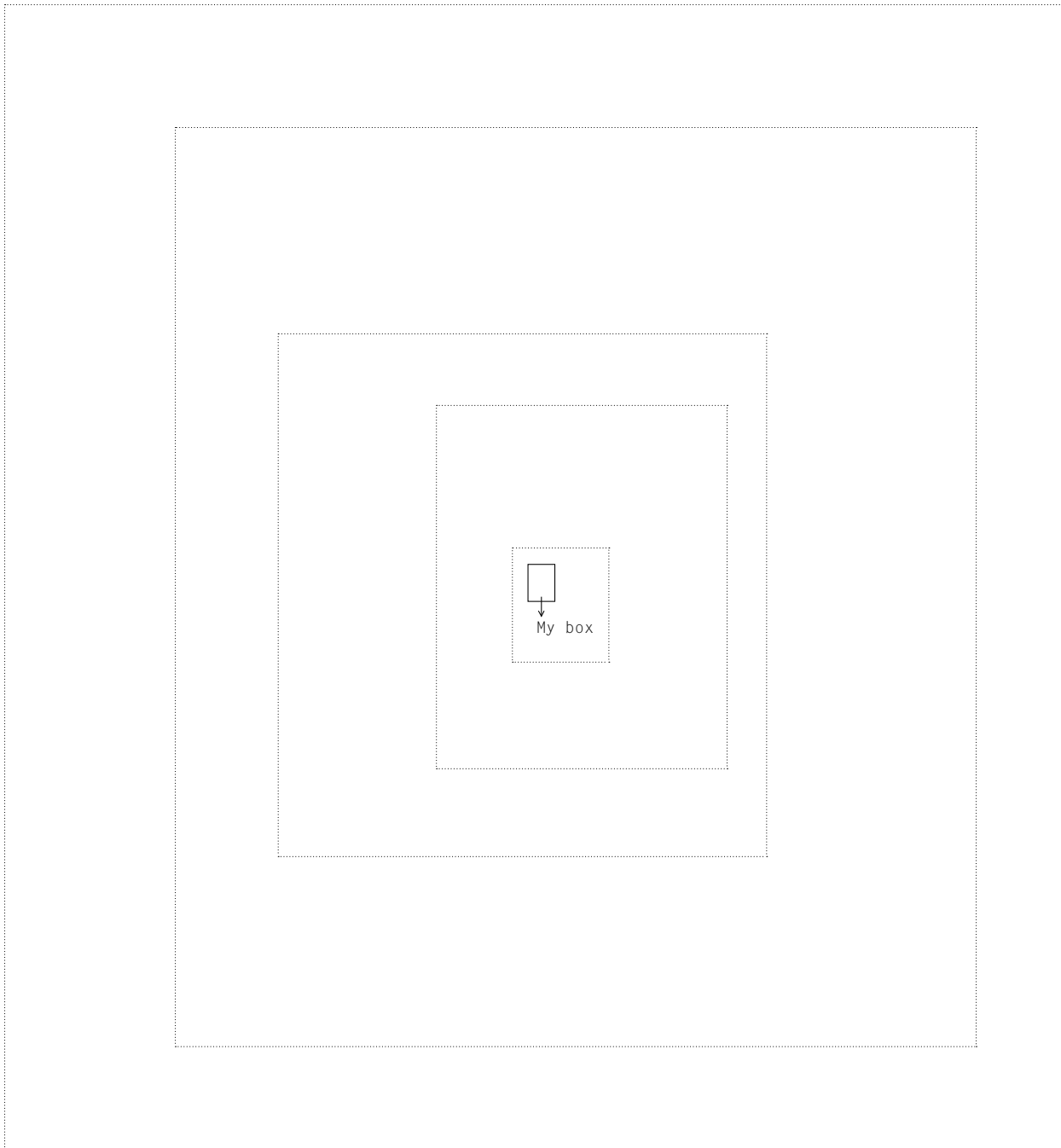
# Generate Instead of Search

The interface is not much different from the user's side — they put keywords and search, while the search function is actually to generating products. People will shop on the virtual site among with virtual products. The product will be produced only if there is a need.

## Thoughts

Here, although I only take the online clothing shopping experience as an example, the application of this concept can be integrated into different aspects of our society.

In the future, we may not need to master a lot of knowledge to do design, engineer, or coding work, if we have the accessibility to every field of knowledge. The form of accessibly can be various. Like in this future shopping example, people without design knowledge can access design method by simply selecting their new cloth. They are doing the design job unconsciously. Maybe in the near future, a lot of work can be integrated into our daily routine and be done by people unconsciously.



Upload a photo

Input key words

Evening Dress Black

**1** Input Keywords

3d body Generator

Style Generator

+

Style + Body Fitting

**2** Generate Products

Personalized Clothing

You are the model

Your pose Your size

Conclusion

My box

## Conclusion

Through my thesis journey, I was exploring approaches to unconstrained thinking — design in a way where innovation and willingness are not trapped by the past. A past which includes but not limited: history, existing knowledge, experience and rules. These are the boundaries of our thinking box. One of my approaches has been to empower our accessibility to all* kinds of possibilities, therefore allowing people to get ideas out of their box.

I must admit, what an arrogant tone to say "all kinds of possibilities" and "unconstrained thinking", as the idea itself is an outcome of my limited knowledge pool. Every research I did, book I read, suggestion I got, came together building up this thesis, and lead to an inevitably constrained result.

The point of my thesis is not as much about the idea itself, but this journey to explore, experience, and reflect on how we think.

"Free yourself of the past and imagine alternative destinies. Of course this is not total freedom - we cannot avoid being shaped by the past. But some freedom is better than none."

- Yuval Noah Harari

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The end.

Thank you for reading :D