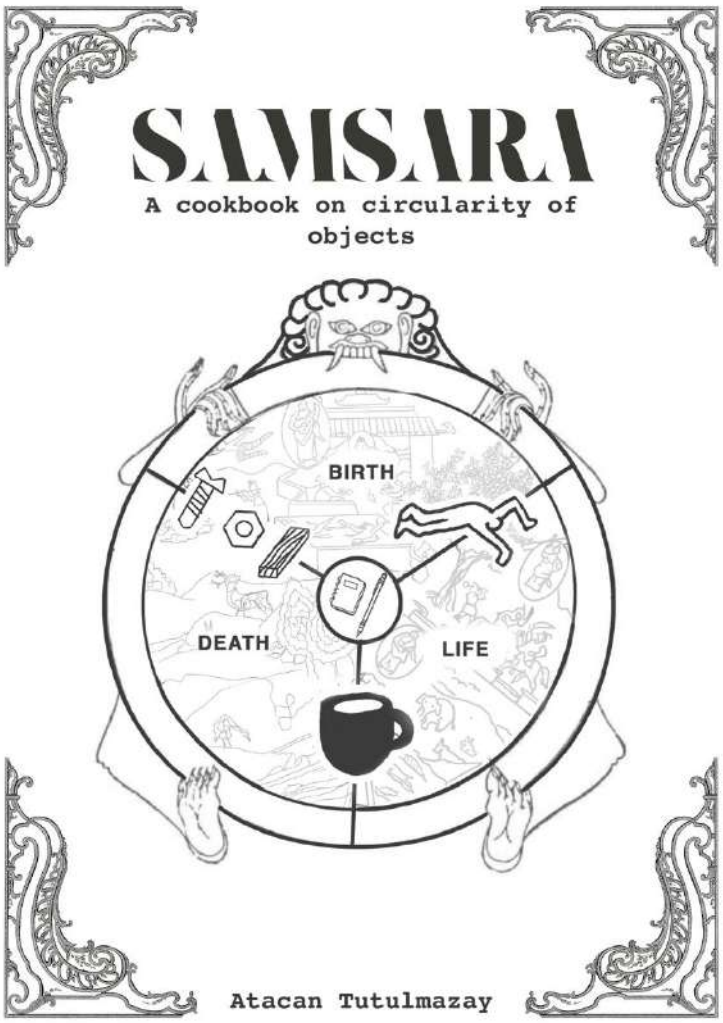
SAMSARA

A design approach to circularity of objects.



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B3.2 Report

Introduction

This project has been designed with an intent on criticizing the consumerism-oriented design ecosystems of today with an intent to create an alternative method of observing designs of everyday objects that we interact with daily. It aims to undress design down to its components to create a speculative thinking practice in perception of the materials that designs have been made possible by and the ways that the future can involve the recipients of designs more into the lifecycles of the products they own.

Such an approach targets to embed resourcefulness into the recipient's daily practice and create a reality in which replacing things and consuming more is not deemed as the only answer to issues with designs that surface with the test of time and paradigm shifts. The common skillset of different generations both evolve and devolve with technological progress and trends, led by design.

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Prologue

The world is designed. Throughout the years and different practices everything around us, nature, objects, thoughts, policies, and lives have been designed.

Innovation is driven through design but, unfortunately with the rise of capitalism and economic concerns, consumer-oriented design innovation started favoring profitmaking. This consumer-oriented design with a focus on profit-making promotes creating specialized products, where it might be valuable to consider generality rather than specialty in the pragmatism of design [1].

Once the consumerist economy and the ecosystem it has built on the basis of artificial labels and extravagant needs retract, it is human nature to simplify, to build, and to suffice for your needs; which is what happened in Cuba with "The Cuban Maker Movement."

While it is not my intention to go into the depths of Cuban politics, it is necessary to understand the socio-politics of the time to truly understand this movement. Following centuries-long colonization and slavery by imperial powers, the Cuban Revolution of 1959 led to the establishment of a socialist government, which was responded to by the United States with a strict trade embargo. Especially with the following collapse of the Union of Soviet Socialist Republics (USSR), Cuba was left without any economic support, resulting in extreme scarcity, and severe shortages of basic goods, such as food, fuel, and materials.

Figure 1:

"The website is a virtual laundry list of descriptions, brands and acronyms that read like anagrams, an extensive itemization of contraptions, in particular of "hybrid" cars: "*For sale: Fiat 125, 1974. Original Motor in mint condition; 5-speed SEAT transmission; NISSAN V-12 carburetor, TOYOTA YARI front seats; new LADA dashboard, fully-functional; SONY CD player with 4 speakers and brand-new PEUGEOT clutch ….*" [2]

The famous quote “Worker, build your own machinery!” by Ernesto Guevara—Minister of Industries from 1961 to 1966 summarizes the spirit of the movement. With the economic concerns of consumption being lifted, the Cubans let go of all the artificial labels and extravagant needs of consumerism. To meet their daily needs for various goods and technology, they started creating and making with whatever they had available, peaking in innovation, practicality, and creativity.

Due to the limited supplies and materials, the movement centered around the pillars of repairs, repurposing, and reinvention. Repairs, being the most widespread practice, was how the Cubans “immortalized objects by preserving their original functions.” [2] By repurposing, they were able to utilize the qualities—material, form, function—of an object that has been thrown away in order to make it work again in different contexts [2]. Finally, with reinvention, the Cuban makers disregarded the industrial culture and context and used parts and pieces of disregarded objects for new innovations. These innovations were also supported by the Cuban military through the book " Con Nuestros Propios Esfuerzos " (With Our Own Efforts) that detailed “crowdsourced ideas on manipulating, repairing or reusing everyday objects.” [2]

Design innovation has been one of the primary ways “defuturing” agendas gained operative (political) power historically and in the present. So situated, design innovation is structurally elemental to, and circumscribed by, its subordination to the economy and culture of “acceleration.” [3]

Samsara as a project aims to criticize this “defuturing” byproduct of design innovation mentioned in the quote above from a paper by Dulmini Perera and Tony Fry on Contra-Design [3] which comes from economies driving consumers to accelerated consumption.

Theories and Approaches

Being a Speculative designer in practice, I inherently design to change how concepts were observed and analyzed. For this project, the main subject is designs and the physical realm of objects in the daily lifecycles of “average” people with or without any design background. This desire of alteration with the daily routines of people has led me to utilize the Everyday theory alongside Irregularity in this project. These theories were tied in together with an experiential speculative storytelling approach to create a narrative revolving around designing, being a designer, taking control of one’s own narrative and evolution of lifecycles of everything around us.

a. Everyday Theory

The everyday is about what is banal, ordinary, not memorable, as well as about the force that makes things habitual, endotic.[4], which makes it a perfect tool for the Speculative designer. Especially considering arbitrary dimensions of everyday interaction with the physical realm around us [4], I wanted to create a different everyday thought process for human-design interaction. The speculative future thought process within this project values a future in which designs are suggested to have lifecycles as living cells and organisms, helping to keep an ecosystem of realities alive in everyday lives, coexisting with humans.

b. Irregularity Theory

The irregularity theory takes inspiration from Yanagi’s book The unknown Craftsman. [Yanagi, S. (2013). The unknown craftsman: A Japanese insight into beauty. Tokyo, Japan: Kodansha International.] The book mentions the beauty of the art and craft of design where there is something to be remained unexplained. Irregularity brings a moment of uncertainty, of openness, and therefore of freedom and possibilities of changes [5].

With Samsara's idea of objects having their own narratives and being considered separate entities with lifecycles, evolutions and to be cared for and considered, bringing an uncertainty to the interaction between the human and the design; thereby freeing the user of the common constraints and opening up space for innovation.

c. Experiential speculative storytelling

Speculating through design, you carry the foreign, the past, or the future into here and now. To achieve this successfully, there needs to be a handle that holds the user's hand and guides them through such unfamiliar experience. With experiential speculative storytelling [6] I use a cookbook to combine Samsara's speculations on design with the very familiar and human experience of cooking.

The story of cooking sets the tone for being explorative, warms up the user, and communicates the rules without a single word: design it as you would cook. Respect the ingredients, understand them, play around, taste it on the way, and enjoy the process.

d. Inside Out

My curiosity drives my speculations. The project Samsara as an idea was born in small first-person experiences: the urge of using my laptop as a meal tray, refusing to separate a jar from a mug, opening beer bottles with keys, and many more. From the lens of the Inside-Out approach [7], this makes the inside. As I proceeded in the design process, the outcome of this refusal transformed into a design manifesto, a cookbook of designs that are challenged by a third person perspective – creating the "out."

Iterations

Before settling down with the Cookbook “Samsara”, I went through iterations with the main topic being abstractness of design and in theory how we could be able to undress design with a speculative approach to it. Initial brainstorms revolved around creating abstract objects which aren’t defined by what they resemble, removing the aspect of familiarity. Defamiliarization has stayed a relevant theme amongst all iterations.

At this stage, I also set the Values of my project. During every design decision, I stuck to these core values with the aim of staying true to myself.

Post-Consumerism:

This project places post-consumerism at its core, recognizing that our present awareness shapes tomorrow's challenges. Consumerism's impact on depleting our world's resources urges us to make mindful choices for a sustainable future.

Changing Perceptions:

In a future that appears uncertain, swift adjustment becomes imperative. Adapting to change might be daunting, yet questioning our conventional norms and embracing transformation holds the key to altering the trajectory.

Embracing the Uncomfortable New Normal:

As the future presents challenges, swift adaptation becomes essential. While change can be intimidating and adaptation takes time, the path forward lies in questioning conventional norms and embracing transformation. This shift has the potential to redefine our trajectory.

Iteration 1: Abstract Objects – Thing #1

Initially I wanted to explore how basic forms related to the functionality of designs. I analyzed different designs through removing suggestive features of the design. These features labelled the designs, they defined “what they are”.
By stripping a design of these suggestive features, an object is left with a sense of ambiguity. Begging the question: what *could* the design be?

This systematic undressing of design allowed me to execute an exploration of the hidden functionalities of everyday objects, stuck with labels on what they are. The paper ‘Unaware objects as creative resources’ describes an experiment of the table-non-table, where a stack of paper was used as a ‘non-table’. In this experiment, the interactions made by users defined the functionalities given to the table-non-table. If a mug were placed, it served as a table, but what else could it serve as? Wakkary put this as a “reflective engagements that were interpretive illustrated a form of creative rethinking of everyday encounters” [8]

Rethinking of everyday encounters inspired me to design a conversation piece. A piece without a singular function, looking beyond its label. The paper ‘Modes of uncertainty’ mentions that to open conversations, the approach, or function, taken for granted should be cast as one possibility amongst several [1]. By designing an object without a label, without a predetermined function, I would allow it to gain a personality and a narrative of its own. Its narrative would be determined through the reflective engagements users have with it, through the affordances its abstract shape has. For these purposes I designed ‘Thing #1’.

Figure 2: Thing #1

I opted for a triangular prism, a wedge, as a basic form. A wedge is a common shape for which many different functions are marketed; e.g., a ramp, a phonestand or a doorstop. But why would a wedge be all these things and not more?
By adding suggestive features, the design steers users to the “thing” it was aimed for. This would invoke users to appoint different functionalities to the creation.

I also wanted to use AI to develop the idea of ‘Thing #xx’, however soon steered away from this as I wanted to give the recipient the control of their “things” and didn’t want generated objects to contribute to an even further consumerist world.

Another way the approach I took for Thing #1 came short due to me having to ‘play god’ which meant that I had to make a lot of assumptions such as adding suggestive features to the design to stimulate new functions. I felt as if this provided me with too much control over the eventual features of the design, working against the main goal of the project.

To battle this struggle, I wanted the next iteration to focus on creating a systematic method of understanding how suggestive features in design play a role in its perception and how we can classify designs to their features.

Iteration 2: Morphological Analysis playground, the Lamp and the Key

To understand how a systemic method for classifying designs by their features would function I decided to apply the inside-out approach [4]. By first designing the suggestive features a design holds I could understand the methodology behind this.

Therefore, I wanted to create objects that are familiar to their original self, but because of the way they were “undesigned” and altered with functionalities from other designs, they serve different functions with similar physical anatomical interactions. This allows me to rethink and defamiliarize the suggestive features of these objects.

To achieve this, I first brainstormed to find iconic designs around us that anyone can relate to because of their commonness by defining an Iconic design as something being immediately recognizable and memorable. I therefore wanted to look for objects that stood the test of time, creating a heritage, in turn creating familiarity in a loop feeding from itself.

I wanted to remove the familiarity aspect from these iconic objects to create an experience setup, a toolkit where a recipient would be able to isolate themselves from the previously attached functionalities of these common objects and invoke them to think speculatively about what they *could* serve as instead of what they are.

There was a 9-item list created for this iteration, three of them were analyzed to create prototypes of how such a toolkit would look like. These selected items were a key, a Bic pen, and an Ikea Tertial Lamp (as a replacement for the Iconic Anglepoise Lamp type 75). These items were analyzed using Morphological analysis, a method suggested by my coach Stephan Wensveen.

Morphological analysis is an approach to problem-solving utilized in engineering and design which works by listing aims and goals as dimensions on one axis and then listing the possible solutions/design choices underneath each dimension. With morphological analysis, design is constructed by picking options from all dimensions of the matrix [9].

When this process is reversed to analyze already existing designs, objects and physical devices can be torn apart to be observed as pure material/ingredients for recipes. From these analyzations of designs and their components, the ingredients needed for recipes as flavors, consistency and overall taste balance are customized and tied together according to the chef's preference of the recipe. Below is an example of how two different chairs are classified with a reverse morphological analysis.

CHAIR 1	DIMENSIONS	CHAIR 2
Cushioned Fabric	Seat Material	Wood
Cushioned Cotton	Back Rest Material	Wood
2	Leg Count	4
Curved	Leg Shape	Straight
Wood	Arm Rest Material	none
Curved	Arm Rest Shape	none

Figure 3: Initial exploration of reverse morphological analysis by two different chairs.

Three main examples were created in this iteration.

2.1: the NOT_a_Key

The key is a mundane object, when analysed based on the action performed while using it. It has been analyzed by its shape, action potential, tip hsape and side indent as these are the main differentiating factors of a key from another flat object that functions by rotation.

Then two of the dimensions of the key were intentionally replaced with elements from a screwdrivers relative dimension which serve the same function to create an object that would inherit the functionality of a screwdriver, whilst still being a key.

Then I modelled a normal key in Fusion 360 in various stages of its completeness as a design. Below you can see the stages of the key 3D printed and as a render in figure xx.

This key has now lost some of its initial functionalities but has also gained some, slowly defamiliarizing itself from its original attached label. The ability to follow the four levels of depth this abstract shape has evolved through shows a point in which an object regains its familiarity. The key looks more like a key even though it does not serve the function as a key at the last step with the added side indentations for example.

DIMENSIONS	House Key	NOT Key
Shape	Flat rectangles	Flat rectangles
Action Potential	Twisting	Twisting
Tip Shape	Pointy triangle	Phillips Head Screw
Side Indent	Secret code for lock	Flathead Screw

Figure 4: designs of the not_a_key and its reverse morphological analysis chart

2.2: The Mug Lamp and 2.3: the Bic Bulb

I have always enjoyed the freedom that a spring-loaded table lamp brings in terms of the ways it provides light around a workspace. One shortcoming that the normal lamp has is, the level of light is not controllable with its default bulb and whils moving the bulb, there is no indicated place to hold its head while readjusting the positioning.

Then by performing a reverse morphological analysis, I identified the dimensions of the lamp and then picked the ones I wanted to change up. These dimensions were the light container, the light creator and possibly the activation, even though the activation aspect was not implemented in the prototype.

DIMENSIONS	TERTIAL Lamp	NOT Tertial Lamp
Mounting	Desk Clamp	Desk Clamp
Movement	3 Axis Spring Loaded Arm	3 Axis Spring Loaded Arm
Light Container	Bowl Shaped	A litteral Mug?
Light Creator	Lightbulb	Pencils?
Activation	In Cable Switch	A key?

Figure 5: designs of the not_a_lamp and its reverse morphological analysis chart

To create this table, I first remembered the undressing act I performed for the key and wrote down the main defining features (now called dimensions) in one axis. As the lamp was already designed, I could see on my specific lamp, which elements were utilized for which dimension clearly. Then, I tried to come up with different objects that could fulfil roughly the same function as the replaced original part.

And a bowl is an object that holds liquids or food, and a mug is another object that is a closed container that could fulfil the same function.

To add another dimension of playfulness to the playground, I decided to look at the ways we misuse mugs in our daily lives. Many people do not buy pencil holders for their tables anymore, instead they resort to using mugs as desk organizers. This misuse generated gave me an idea as the pen in this function belonged inside the mug, why not within the lamp, the pen can also be the light source, as it is a familiar action to place the pen in the mug because of set habits.

This meant that I needed to design the pen into a lightbulb. I therefore performed the reverse morphological analysis routine on the pen as well to come up with its dimensions to see how I would be able to transform it to a lightbulb. This brought its own specific set of challenges as the pen wasn't anywhere close to being as large as a lightbulb and therefore one pen would not be as powerful as a conventional lightbulb. But we also usually don't put a single pen into a pencilcase or a mug to organize. We put a bunch of them.

Therefore, I picked up 0.5-watt high powered mini-LEDs, and then also utilized the caps of the pens with a new function as redirecting/adjusting the amount of light that the LEDs were putting out. On top of all these, now our lamp has a handy grab handle to readjust the angle of light it provides. This exploratory approach has again created new functionality from otherwise misused items and products.

The morphological analysis approach has worked well but it needed more depth to be reproduceable and this depth was added in by turning this experimental process into a framework that could be followed along. Which brought us to Samsara.

DIMENSIONS	Pen	Not Pen
Shape	Hexagonal Cylinder	Hexagonal Cylinder
Action Potential	Pointing	Pointing
Tip material	Ball Point Ink Cartridge	.5 Watt WHITE LED
Cover	Pen Cap	Light Reducing Cover

Figure 6: photos of the not_pen and its relevant reverse morphological analysis chart.

Final Concept

Samsara, with its profound cyclical philosophy, offers insights that can reshape our values for the future. Thus, to the core values of this project, we added two new pivotal values that gain resonance within this context are resourcefulness and circularity.

Resourcefulness

In the face of an uncertain future, resourcefulness emerges as a guiding principle. Samsara's constant cycle of birth, death, and rebirth prompts us to rethink how we utilize resources. As we witness the finite nature of existence, we're reminded of the finite resources of our planet. Embracing resourcefulness means using materials efficiently, repurposing what's available, and minimizing waste. This value becomes crucial as we strive to create a sustainable world that can endure the test of time.

Circularity

Circularity, entwined with the concept of Samsara, emphasizes the importance of continuous renewal. Just as consciousness evolves through lifetimes, our approach to products and materials should evolve in a circular manner. It calls for a shift from the linear model of "take, make, dispose" to a holistic approach where products are repaired, remade, and then, if necessary, recycled. Circular thinking mirrors Samsara's rhythm, promoting a balanced give-and-take relationship with our environment. By embracing circularity, we align with the fundamental essence of interdependence and continuous transformation that Samsara encapsulates.

Samsara beckons us to transcend our current mindset and cultivate values that harmonize with the perpetual journey of existence. Resourcefulness and circularity, arising from the heart of this philosophy, illuminate our path toward a future that is sustainable, interconnected, and enduring.

By exploring previously on the lifecycles of objects and forms and how uncertainty and unaware objects could give items a different life than what they were initially designed for, I ended up with Samsara as a playful criticism piece on the designs of today, by treating everything and all as coming from material and returning back to becoming material once they die.

Samsara is a philosophical metaphor for design to circularity and sustainability of design moving forward. This exploration invites designers to relinquish the pursuit of static perfection and instead embrace the dynamic journey of creation. It encourages them to view their creations as integral components of an interconnected ecosystem, transcending temporal boundaries and contributing to the enduring tapestry of existence. Designers, guided by the philosophy of Samsara, become architects not only of forms but also of the experiences, emotions, and memories these forms evoke.

In the interplay between Samsara and design, a profound truth emerges: the interconnectedness of all things. Just as Samsara weaves the threads of interconnected lives, experiences, and energies, design interlaces its creations into the broader fabric of existence. By recognizing the cosmic dance of Samsara and design, designers are poised to approach their craft with mindfulness, responsibility, and a deep respect for the enduring legacy of their creations.

The intersection of Samsara and design invites us to perceive the world through a multidimensional lens—one that transcends the confines of time and individual existence. It is an invitation to recognize the intricate rhythms of life, the impermanence of forms, and the beauty of cyclical transformation. As we navigate the cosmic wheel of existence, just as in the evolution of design, we find ourselves woven into a grand tapestry of interconnectedness—a tapestry that is, in its essence, the dance of life itself.

Samsara takes form as a cookbook, honoring the defamiliarizing nature of the framework it is.

FRAMEWORK

This cookbook aims to tie in ingredients from any foraged designs together via a formulated cooking method. As with every interaction in life, this framework also has two parties. Ingredients “grow” up by being designed and released into the wilderness and they participate in dishes by being collected. Just like the ancient civilizations of hunter gatherers. The two parties involved in this framework are, the chef (forager) and the designer (mother nature). Designs and their components provide the ingredients for recipes. And then it is up to the chef to cook (interface) these components together.

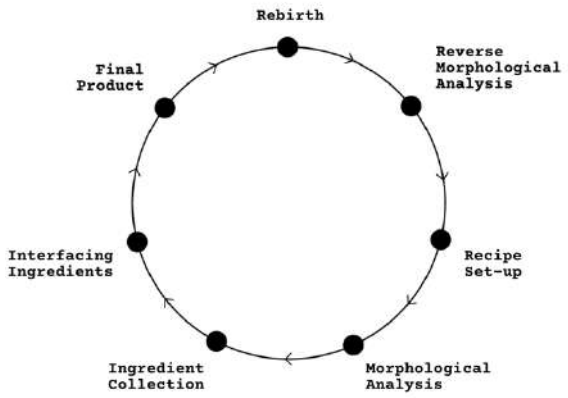


Figure 7: circularity framework diagram from the cookbook

The framework the cookbook describes consists of a cyclic set of steps shown in the diagram below. These steps allow a user to compile a ‘recipe’ to interface different items to step out of the realm of the predetermined functions the ingredients, or designs, hold.

The first step consists of choosing a design to repurpose, on this design a reverse morphological analysis is executed. This reverse morphological analysis aims to create an overview of the possibilities that the reincarnated design holds to either re-live or to participate in another designs rebirth and is done via the template shown in Fig. 8.

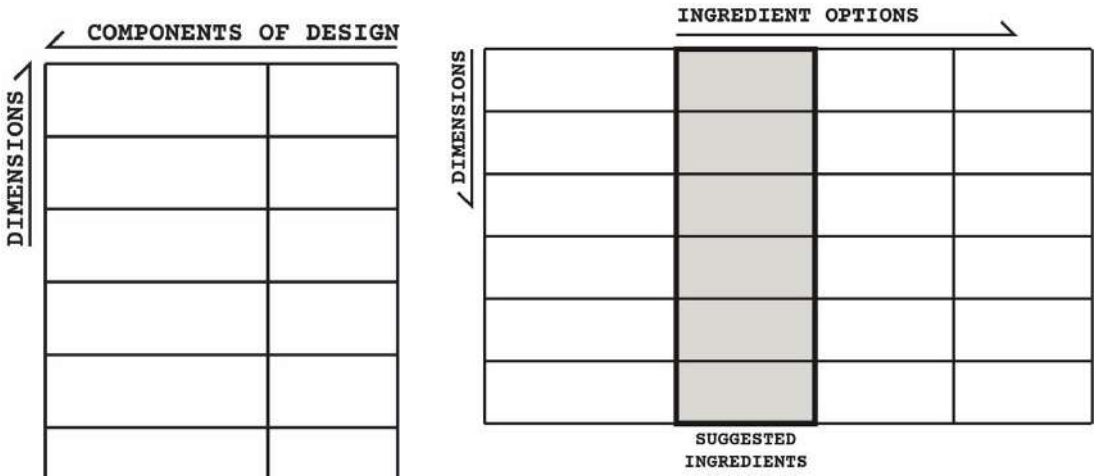


Figure 8: reverse and regular morphological analysis charts used on the recipes of the cookbook

This is followed by the recipe set-up, in which goals are set on what to create based on the set of opportunities created in the previous step. The missing features the ‘Chef’ can then find in other object, other designs that serve as ingredients. Once all the ingredients are decided upon a morphological analysis can be performed and distinctive features can be selected to meet the goals set.

The Chef continues by gathering the ingredients and start interfacing the unique features together, he starts to cook. Using methods such as cutting, soldering, welding and other skills available to the chef they start to prepare the final dish, the final product.

Recipe Setup:

In the book the recipes are classified in two kinds, one being full recipes which are built with foraged components from the ground up to come up with a new design, and the other being “seasoning/Sauce making” an already existing design by repairing or improving it by customization. In the book Samsara, there is also a difficulty level specification for the provided recipes to give the reader the ability to expect what sort of an experience they might be needing to cook the dish.

To help the reader understand how these recipe setups work, 3 example recipes were placed in the book. One of them is the Lamp example already covered before in this report, written out according to the Samsara framework. We will elaborate more on the other two in this section.

The “Hold my Cup Lamp” is an example to a Seasoning/sauce making recipe, whereas the other two examples provided are examples of full dishes. The other two examples are called “Tool Wall” and “World Record Rack”

The tool wall is a recipe I baked to produce a function from some components in my room that I wanted to improve upon. I wanted to create a storage space for my tools.

I first added this desire of mine into the morphological analysis matrix, and then looked at the items around my home. I analyzed a pipe I found from before using the reverse morphological analysis method.

I then added the dimensions I desired to attach to this system of materials I found by performing a morphological analysis according to the needs and requests I had from this system.

DIMENSIONS	COMPONENTS OF DESIGN
Body	Pipe
Shape Adapters	90 Deg Bracket
Attachment	Wall mount of Pipe
Fasteners	Screws

Figure 9: reverse morphological analysis of the pipes found using the samsara framework

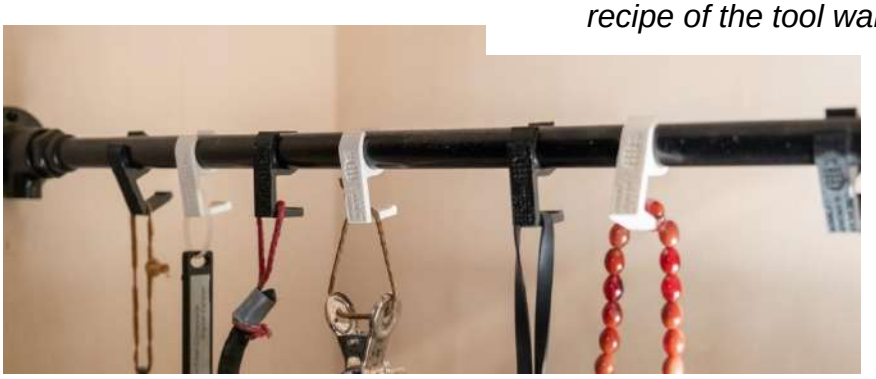
Next, I noted down my step-by-step process of interfacing these ingredients and wrote them down for the recipe. And as my design was complete, my recipe was also complete while also being logged in a way that is reproduceable.

I also decided on other ingredients lying around at the house according to their “possible dimensions” that I have picked up/foraged by running them through a reverse morphological analysis.

This table now completes the recipe’s dimensions setup and what remains is to figure out the cooking/interfacing method that these dimensions and ingredients will be tied together with.

DIMENSIONS	INGREDIENT OPTIONS		
Body	Metal Piping		
Wall Mount	Piping Adapter		
Body Connections	90 Degree Pipe		
Wall Fasteners	Screws		
Tool Extensions	Rope		
Tool Mounts	3D Designs		
	SUGGESTED INGREDIENTS BY RECIPE		

Figure 10: photo of the assembled prototype(below) and the morphological analysis recipe of the tool wall.



For the World Record rack, the overall process was the same. The ingredient choices were however simplified and altered to provide a simpler recipe setup.

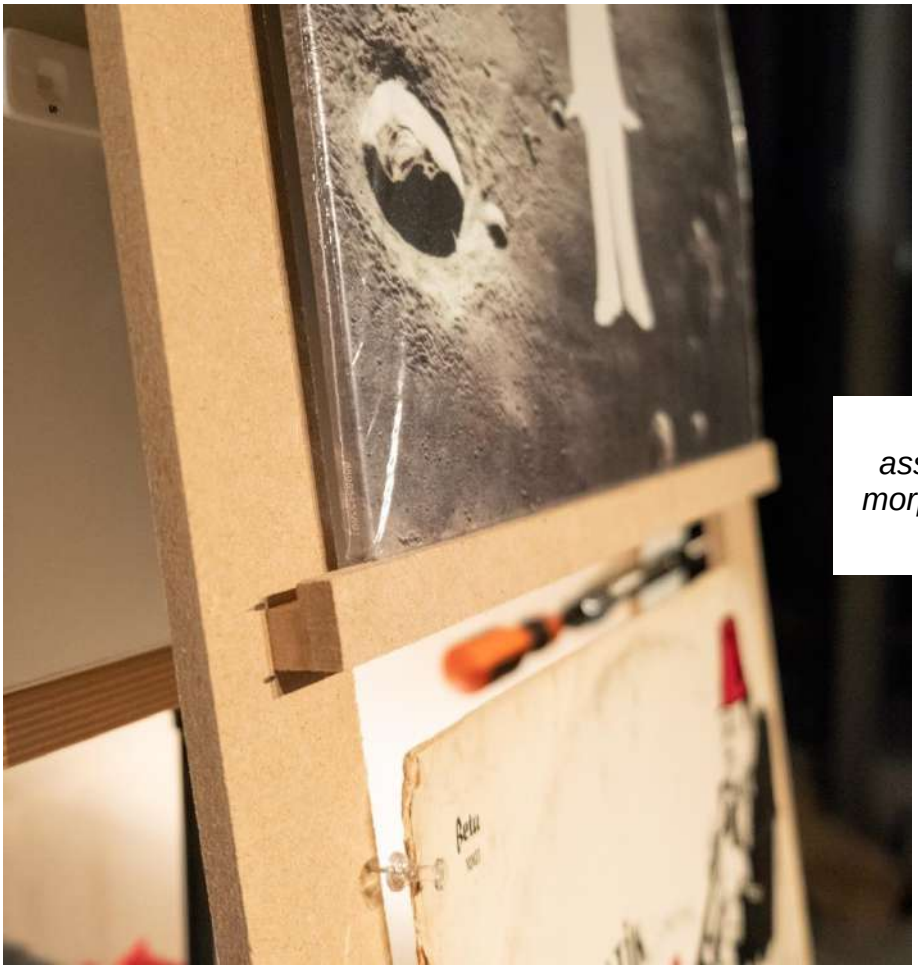


Figure 11: photo of the assembled prototype and the morphological analysis recipe of the world record rack.

INGREDIENT OPTIONS →

DIMENSIONS ↓

External Rack Mount	Screws OR Hooks		
Capacity	3-4 Records		
Load Securing	Horizontal Lip		
Body	Wood Strips		
Horizontal Support	Thin Strips of of Wood		
Internal Rack Mount	Wood Glue OR Screws		
Internal Vertical H	35-40 CM		
Horizontal Distance	33-35CM		

SUGGESTED INGREDIENTS BY RECIPE

Designer Guidelines

Alongside the Samsara framework comes a helpful set of ideals to follow while designing new objects as designers, and not only as a ‘Chef’. These values are important to make sure that our designs can live on beyond our lifetimes, let alone the period they were built with an expiration date attached to them, taking timelessness to the next level. These guidelines are set up for any designer who is interested in applying the Samsara principles to their design work.

The first guideline to follow is to interface at birth. Multi component designs use physical interfacing methods to interact between dimensions. The different interfacing solutions should be considered within the realm of dimensions at the 'birth’ of a design. This can be done using a morphological analysis.

For future lifecycles the interfacing between the components should be preferred to mainly be reversible and adaptable, thereby contributing to generality rather than specialty in the pragmatism of design.

The second guideline is to design to a component level. Design is not boring; it is special and complex. The components make up the different dimensions of a design. By paying attention to design ambiguous components, they can be reused or repurposed. By favoring reversibility of the initial assigned usage case/purpose a designer can contribute to a world with more generality.

Discussion & Future

Through exploring and applying the approaches of the Everyday theory and the Irregularity theories two initial iterations were created to explore the role of ambiguity in the future of design.
In the first iterations the ambiguity of shapes and suggested features was explored, and a closer look was taken at how to undesign objects. This led to a rough methodology on how to approach answering the question of what a design *could* be.

This eventually led to the final concept of Samsara. By applying an inside-out approach I could design these evolving objects with their own narratives and stories, and use the insights gained in this process to form the eventual framework outlined in the Samsara cookbook.

The metaphor of cooking allowed me to create a clear overview of the different steps in the process in a relatable fashion for the reader. Since the framework is new and bases its foundation on exploratory approaches, giving the reader something to relate to their past experiences in life made it easier to grasp.

Through applying this approach and creating the different recipes described in the book I could fully experience how this proposed methodology affects perspectives and results.

Samsara invites designers to step out of their perspective and move towards finding a new speculative thinking practice. It fights the preference of profit-making in a consumer-oriented design industry, by laying a focus on resourcefulness and circularity. Using the guidelines phrased in the cookbook, designers get a helpful set of ideals to follow while designing new objects as designers, not only “Chefs”.

Besides established designers, this framework also opens a gate on anyone interested in taking control over their own products, creating guidelines for them to follow while trying to solve their challenges with their belongings. This welcoming approach makes ordinary recipients of designs, also their designers by creating an understanding of how their products were created, and how they could keep the designs alive.

Future steps for Samsara would be to have different designers try to use the book, and produce their own recipes, thereby expanding the book and the inspiration it can offer others. Furthermore, a toolkit set could be designed to help people step out of their comfort zone and explore designs from a perspective that they have not participated in before.

Conclusion

Samsara critiques the subordination of design innovation to economic and cultural acceleration in today's consumer-oriented design ecosystem. Through exploring and applying the approaches of the Everyday theory and the Irregularity theories two initial iterations were created to explore the role of ambiguity in the future of design. Through reflective processes on these iterations and finding inspiration in the Cuban Movement the eventual concept of Samsara was created in the form of a cookbook of interfacing design ingredients.

Samsara forms a framework and reflective exercise for designers to shift their perspective. It aims to answer the question of what happens to an object after their figurative ‘death’, it guides designers to find new purposes for these dying objects, by treating them as ingredients in a new dish, a new product, and a new life.

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[6] Smith, M., Zwan, S., Bruineberg, J., Djajadiningrat, T., Lévy, P. and Hummels, C. (submitted). Scaffolding shared imagination with tangible design. 15th International Conference on Tangible, Embedded and Embodied Interaction (TEI 2021), February 14-17, 2021, Salzburg, Austria. New York, USA: ACM

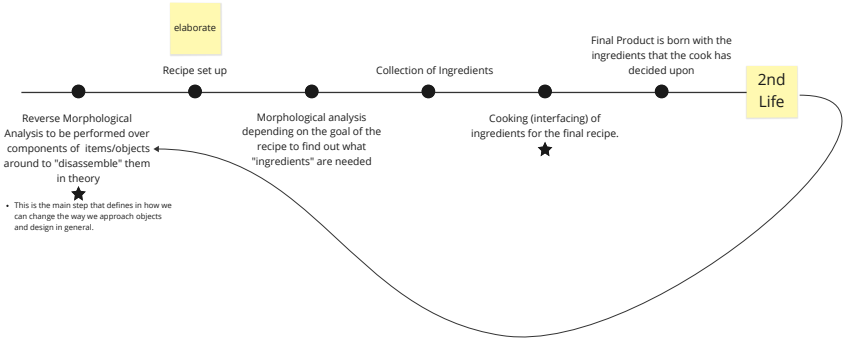
[7] Levy, P. D. (2018). The beauty of making hot chocolate: An inquiry on designing for everyday rituals. In Proceedings of the DRS 2018: Catalyst (Vol. 5., pp. 339-348). London, UK: Design Research Society

[8] Odom, W. and Wakkary, R. (2015) 'Intersecting with unaware objects', *Proceedings of the 2015 ACM SIGCHI Conference on Creativity and Cognition* [Preprint]. doi:10.1145/2757226.2757240.

[9] New Product Design. Morphological Analysis. Retrieved August 18, 2023 from http://npdbook.com/engineering-concepts/function-structure-diagram/conceptual-design/morphological-analysis/

Appendices

RECIPES for misuse.



Designer Guidelines

Interfacing

- Multi component designs use physical "interfacing" methods between dimensions.
- Different interfacing solutions should be considered within the realm of dimensions within a morphological analysis
- For future lifecycles, interfacing should be preferred to mainly be reversible and adaptable

Component Level Designing

- Design is special. Design is complex.
- Design within the component level should favor reversibility of the initial assigned usage case/purpose .
- Components make up dimensions

Abstract objects: how counterfunctional generic forms can teach us to be "better" creative humans?

Jul 23

evolution mainly took a turn towards how approaching existing designs as generic forms can be utilized as a framework of design

Research

Ideation

medium.com

Ambiguity and design

Ambiguity is a key part of design. It points us to the uncomfortable gap between 'what is' and 'what could be' which is where I believe...

“The quality of being open to more than one interpretation; inexactness.”


Cuba's DIY Inventions from 30 Years of Isolation

YouTube

https://www.researchgate.net/figure/In-1992-The-Cuban-military-issued-a-book-called-Con-Nuestros-Propios-Esfuerzos-With_fig2_277326650

with our own efforts

Ambiguity as a resource for design


https://www.researchgate.net/publication/2903668_Ambiguity_as_a_Resource_for_Design

Modes of Uncertainty in HCI

www.nowpublis...

now publishers - Modes of Uncertainty in HCI

Abstract This monograph examines how HCI conceptualizes, situates, and responds to uncertainty-particularly arguing that our ability to respond to such uncertainties is governed to a great extent by the concepts we use to enframe a single, encompassing,...

Generative mode of uncertainty

"generativity, in which uncertainty was viewed as a resource rather than an obstacle" (327)

"opening up of the conversation, ... when the approach we take for granted is instead cast as one possibility amongst several" (328)

www.britannica.com

Samsara | Karma, Reincarnation & Dharma

Samsara, (Sanskrit: "flowing around") in Indian philosophy, the central conception of metempsychosis: the soul, finding itself awash in the "sea of samsara," strives to find release (moksha) from the bonds of its own past deeds (karma), which form part ...

https://www.researchgate.net/publication/360703402_Endogenesis

https://www.researchgate.net/publication/370180462_Democratizing_Making_Scaffolding_Participation_Using_e-Waste_to_Engage_Under-resourced_Communities_in_Technology_Design

https://www.researchgate.net/publication/368247003_Contra-Innovation_Expanding_the_innovation_imperative_in_the_context_of_futuring_defuturing_and_fictioning


www.technologicaldisobedience.com

Technological Disobedience Archive = Desobediencia Tecnológica Archivo

1999 2017 2020 2021 accumulation adentro appropiation architecture of necessity Archive Objets réinventés arquitectura de la necesidad Autika engine Azimuts 52 Con Nuestros Propios Esfuerzos corrected object Desobediencia Tecnológica El Libro de la Fami...


www.tue.nl

Unaware Objects

Unaware objects are a type of interaction design artifact that emphasizes actuality over functionality, which has neither an explicit interface nor computational awareness of its owners presence or actions. As a result, unaware objects can be seen to be...


dl.acm.org

Counterfunctional things | Proceedings of the 2014 conference on Designing interactive systems

This paper presents a set of design studies and discussions investigating new possibilities in designing digital limitations. Focusing on digital photography as a medium, we present design prototypes and experiments including Ultra-Low Resolution Displa...

functional oppositions

STRANGE FAMILIARITY!! novelty of technology wears off


Habits in Everyday Life: Thought, Emotion, and Action

Turning design Upside Down?

"Valuing generality rather than specialty in brining together scientific empiricism, the pragmatism of design and other influences"

Teaching user to be on the otherside

There is no escape from UNCERTAINTY

an object can transform what it (as the user changes)

habit making property, learning curve

an item that is(n't) but that is way more

value of the Product: aesthetical value created through emotion

an homage to bauhaus

(possible) ***Directions*** **for the "object"**

Small Furniture

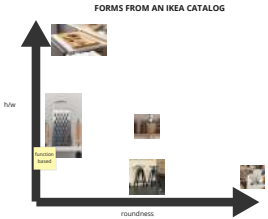
Kitchenware

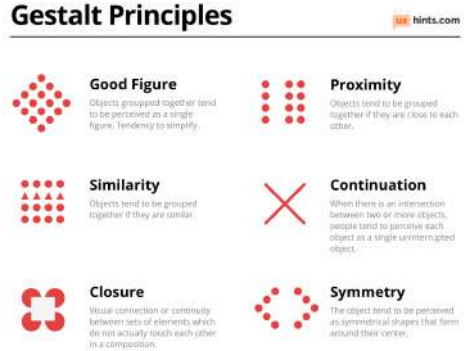
Desktop Tool

Why defmailiarization is effective in driving innovation forward

Dieter Rams: Principles of Good Design

- **Reflects back to defamiliarization with examples**
  - Record player eg.
  - Radio that turned out to be ipod

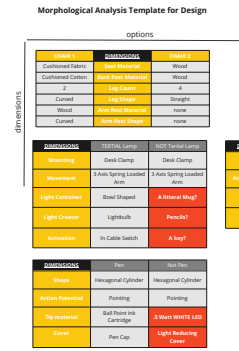




strangely bizzare

strangely problematic

strangely useful

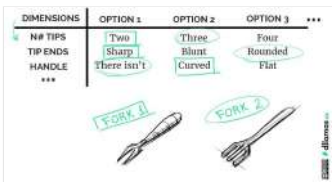


DESIGNED FORMES CAN BE analyzed BY THE ARBITRARY DIMENSIONS IT FUNCTIONS WITHIN TO SOLVE A PROBLEM

npdbook.com

Morphological Analysis

General Morphology was developed by Fritz Zwicky, the Bulgarian-born, Swiss-national astrophysicist based at the California Institute of Technology. Among others, Zwicky applied Morphological Analysis (MA) to astronomical studies and the development of ...



lastbasic.com

How to perform a morphological analysis

What is a morphological analysis? Separates an object into as many dimensions as we can find variables in order to design them individually.

doi.org

Redirecting

SAMSARA

is a Pali/Sanskrit word that means "wandering" as well as "world," wherein the term connotes "cyclic change" or "cyclicity of all life, matter, existence", a fundamental belief of most Indian religions.

A design approach to circularity of objects.

Life of a physical Object

"Birth"
when the item has initially been designed

→

"Life"
perfect operation of the initial design for the relevant period

→

"Death"
when the initial assigned function is no longer needed/possible

What happens after death?

- waste
- recycling
- ***or?***

Living organisms digest and keep up an ecosystem thanks to decay. Decay is unevitable within existence of materials and chemistry. But decay doesn't have to be physical.

REBIRTH

Foraging for dimensions

Previously mentioned "morphological analysis" method has been a tool to define how "designs" are made. Reverse morphological analysis is a made up formula I created to undress the mystery behind a design.

The COOKBOOK

Framework to Cook new possibilities from design.

With Guidelines for designers on how to welcome the rebirth of their designs, and a framework for the "end user"/parent/chef to follow, we can create recipes of Misuse. with these recipes new objects are born from the decaying remains of objects of yesteryear.

Technological Disobedience:

The Cuba Example

Guidelines to follow for designers

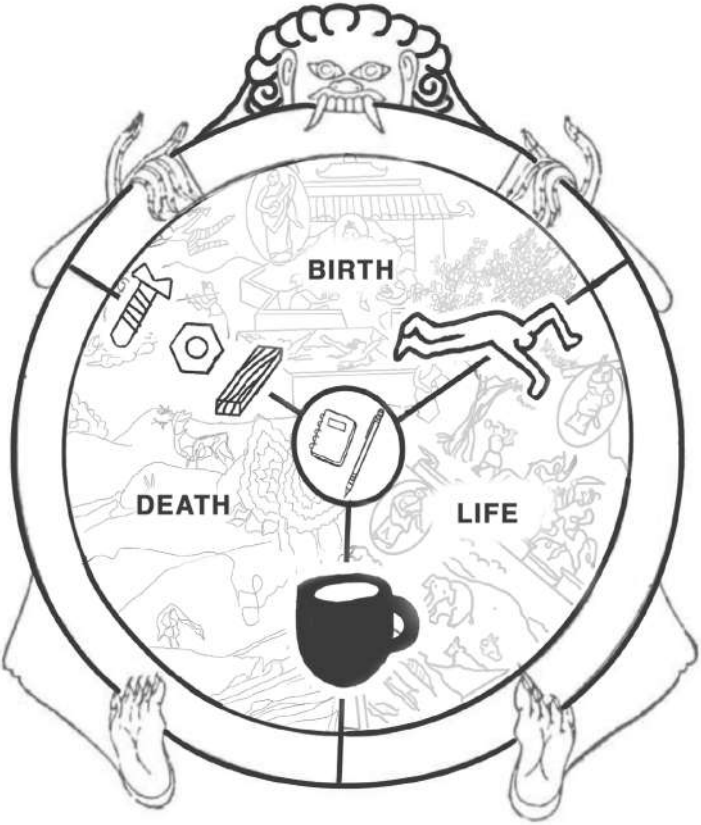
Framework to follow for consumer

Consumer becomes the new designer

New Designer should also follow the same guidelines.

SAMSARA

A cookbook on circularity of objects



Atacan Tutulmazay

0. INDEX

1. MANIFESTO

The world is designed. Throughout years and different practices everything around us, nature, objects, thoughts, policies, and lives have been designed.

But design, got ***boring***.

Design got boring in the way that, with our short-termed ambitions the values centered around objects has been reduced from what the value of life actually is to the value of monetary concerns, manufacturability limits and trying to move more objects by creating a sense of fashion towards changing what aesthetics and functions bring to the user's life.

Life as we know has different phases: birth, growth and death. Living organisms digest and keep up an ecosystem via death and the decay. Design, art and science follow a similar cycle, except that in design of everyday things, death of an object usually means the end of its participation in the ecosystem of life.

Today as an object faces death, they either face becoming landfill or being recycled. But most objects of the physical world today are more complicated, creating the question, what if there was another option? What if rebirth and reincarnation of objects, or them decaying and being utilized in a different lifecycle of another object was possible?

Examples of this approach has been evident in different communities. One of them being the "makers" around the world who like tinkering with products and objects by tinkering or just building their own to serve their own specific needs. Especially with the internet generation, information became very readily available and it became very easy to connect with peers interested in similar projects, inherently creating a subculture.

But the main example Samsara is based on is an approach taken by the Cubans when embargos made it literally impossible to fix and buy new parts of machinery needed in daily lives of people. The items built ranged from chargers for batteries of hearing aids to chairs made out of steel pipes and plywood. To support this revolution, there even was a book published by the Cuban military named "Con Nuestros Propios Esfuerzos" translating to "With Our Own Efforts"

"Worker, build your own machinery!": this was the appeal that Ernesto Guevara—Minister of Industries from 1961 to 1966—directed to the participants of the Primera Reunión Nacional de Producción [First National Production Meeting] in August 1961.

This event was the first ideological initiative of the national movement of Cuban innovators and inventors, who had begun organizing themselves.

in 1960 with the Comités de Piezas de Repuesto [Committees of Spare Parts]. – excerpt from the Archival project Technological Disobedience by Ernesto Oroza[x]

As seen from Cuba's story, humanity tends to learn fast when it is forced to adapt. The most recent example to this being the global pandemic which made societies adapt to remote working, internet assisted tools and revolutionized the way we treat office spaces for working by creating widespread adoption of remote/hybrid working environments.

This is where Samsara becomes our reality. Living in a finite world in an infinite consumption mindset is impossible to sustain. Eventually humankind will learn to adapt to limit usage/consumption and consider circularity in every aspect of life.

Samsara is a Pali/Sanskrit word meaning "wandering" and "world", while connotating "cyclicity of all life, matter and existence". Samsara aims to give you the control of things you touch, interact, need and/or want in your day-to-day life as a practice, before you have to learn to do it. The you mentioned in this book is any and all from all backgrounds.

Samsara is a cookbook. It is an analogy, a playful nature for humans to help reconsider the physical realm of objects around. It is a thoughtful practice on the practice of treating objects as living beings with their own narratives and evolutionary path. Samsara aims to give an option to the question of what happens to an object after their figurative "death".

2. FRAMEWORK

This cookbook aims to tie in ingredients from any foraged designs together via a formulated cooking method. As with every interaction in life, this framework also has two parties. Ingredients "grow" up by being designed and released into the wilderness and they participate in dishes by being collected.

Just like the ancient civilizations of hunter gatherers. The two parties involved in this framework are, the chef (forager) and the designer (mother nature).

Designs and their components provide the ingredients for recipes. And then it is up to the chef to cook (interface) these components together.

Recipes are set up based on the requested end flavors of a design (features) and filling those gaps with the fulfilling ingredients (components). As the chef gets more used to the foraging section of this framework, the preparation work decreases as foraging becomes a daily principle of looking into designs you might interact with on your daily life.

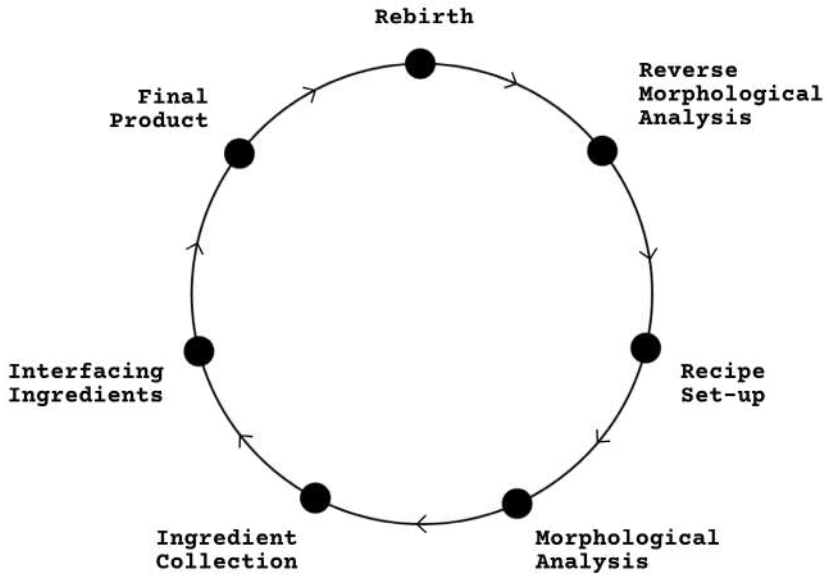
LIFECYCLE OF PHYSICAL THINGS
(AS OF TODAY)

BIRTH
when the item has initially been designed

GROWTH
perfect operation of the initial design for the relevant period

DEATH
when the initial assigned function is no longer needed/possible

LIFECYCLE PROPOSED BY SAMSARA FRAMEWORK



The following sub sections explain the main spirit of gathering materials and making them speak together by creating them into long lasting dishes for the future consumption of your biological daily needs. In mainstream designed objects, the picked dimensions are usually fused together, within the Samsara framework the links between the dimensions are mentioned as interfacing/cooking methods which will also be elaborated in their respective sections below.

Foraging the wilderness: Reverse Morphological Analysis

The main theory towards this foraging and interfacing method is based on the reversal of a method called morphological analysis [2] . Morphological analysis works by listing aims and goals as dimensions on one axis and then listing the possible solutions/design choices underneath each dimension. With morphological analysis, design is constructed by picking options from all dimensions of the matrix.

When this process is reversed to analyze already existing designs, objects and physical devices can be torn apart to be observed as pure material/ ingredients for recipes. From these analyzations of designs and their components, the ingredients needed for recipes as flavors, consistency and overall taste balance is customized and tied together according to the chef's preference of the recipe. below, there is an example of how two different chairs are classified with a reverse morphological analysis.

These descriptions to each dimension in a morphological analysis are classified as "suggestive features" extracted by zooming in on each component of a design separately. By reversing the morphological analysis process, each component, when taken out of their original context, becomes new ingredients.

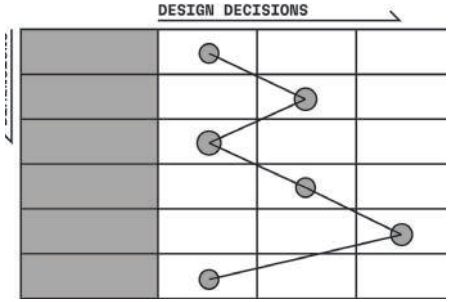


DIAGRAM OF MORPHOLOGICAL ANALYSIS MATRIX

DESIGN OPTIONS

DIMENSIONS		
Seat Material	Cushioned Fabric	Wood
Back Rest Material	Cushioned Cotton	Wood
Leg Count	2	4
Arm Rest Material	Wood	None
Arm Rest Shape	Curved	None
Leg Shape	Curved	Straight

CHAIR COMPARISONS BY MORPHOLOGICAL ANALYSIS

With this base level understanding of how reverse morphological analysis creates opportunities for components to live in places they were never intended to be deployed in, there is a need to cook these ingredients into harmony using different interfacing methods.

Cooking/Interfacing components

Raw ingredients can sometimes be appealing. They can also be health hazards involved with consumption of designs raw. By cooking these ingredients together, chefs can make new designs sterile and safe to consume.

In the art of cooking, different methods add different characteristics to meals. Stir frying, simmering, mashing for example can each bring different flavors to the same set of ingredients. This is the same in design. Imagine a Wassily chair, interfacing the sittable surfaces with flat straps mounted with tension.

Samsara recipes, while assembling the dishes suggests different cooking methods per recipe depending on the need and requirements of the dish. Below are some examples of the cooking methods that could be utilized for the recipes:

Knots - tying chicken legs, morphing shape, connecting ingredients

Knotting forms a variably complex method of interfacing different ingredients. A string with a simple flat knot can be used to temporarily bind ingredients together, such as chicken legs in cooking, or to help one mallable ingredient to hold shape; such as in a 'roulade'. Knotting as a interface method affords accesible connecting or molding shape of ingredients with a low skill requirement. It is a non-destructive and easily reversible method. Zip ties are also considered as a self-sustaining knotting device.

Soldering - glazing

Soldering is a method in which two metallic ingredients can be connected by heating a third metal, often tin, and applying this to the connection point. It has a medium skill requirement, and therefor requires some practice. A specific tool is required, a soldering iron, and the connection can be undone using the same or a slightly more specific tool without destroying the initial ingredients. The method affords interfacing two ingredients in a seemingly seamless manner yet lacks some strength of connection.

3D Modeling - Morphing dimensions together.

By 3D-modeling attachments two ingredients can be interfaced without altering the ingredients or making any permanent changes. By creating a custom-fit interface between the ingredients virtually any objects can work together to create a system, or a dish. 3D-modeling does require a high skill set and expensive tools such as a 3D-printer, however the result allows for a large array of possibilities without any destructive results.

Gluing

Glue uses chemical compounds to bind different ingredients together. Different compounds have different qualities and uses cases; differing in strength of connections, working time and most effective surface material. This interfacing method affords quick, non-destructive binding of ingredients with a low-skill required.

Drilling/Screwing

Drilling screws into ingredients as an interfacing method compares to sticking a shish through meat to create a shish kebab. It forms a connection, interfaces, the different ingredients and binds them together in a fast and easily reversible way. However, the ingredients are left damaged with a hole. Drilling affords fast and strong connections, while having a low skill requirement.

Cutting

Cutting divides ingredients, resizes them and forms a first step to make towards the desired result. The same goes for cutting as an interfacing method, it creates a definitive adjustment to an ingredient to shape it to the 'cook's' desire. The cuts can be made using a variety of tools depending on the materials, such as knives or saws, and can be reversed using other interfacing methods such as gluing. Cutting affords a simple and fast way of changing an ingredient to a desired state, therefore having a low skill requirement. Some risks persist, such as cutting yourself, but can be avoided by careful handling of tools.

Welding

Welding forms an interfacing method to join two materials together using either heat or pressure. This interfacing method is most frequently applied to metals or thermoplastics and requires an advanced skillset that comes with a certain level of risk. The interfacing method has a similar affordance as soldering, however, creates a stronger bond but is more permanent and requires more skill, and has a higher risk factor.

RECORD YOUR OWN INTERFACE METHODS BELOW.

A kitchen is a place of many possibilities within the realm of one's imagination. Feel free to note down your interfacing methods in these blank sections with your relevant descriptions. Each culture of kitchen brings their own methods of experience-based cooking.

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Recipe Setup

There are two main ways to set up recipes. One of them is seasoning a main dish by repairing/improving it and the other is producing a fresh recipe out of raw ingredients foraged from the wilderness.

Seasoning/Sauce making

This method is mainly revolving around a main ingredient or set of ingredients to amplify the taste and resourcefulness of a design by creating a thick flavorful sauce with seasoning. The main dish that this sauce is added on top of could have been a dish on its own but is just not complete or there is a problem with it, keeping it from being completed. Repairing or replacing parts from existing designs with foraged factors could help complete the dish.

In these recipes, most of the dimensions/suggestive features in the morphological analysis chart is already full and there is only needed to add new dimensions or replace the old dimension that was deemed broken or inadequate with a foraged ingredient to complete the matrix determined by the chef.
--

Full Dish

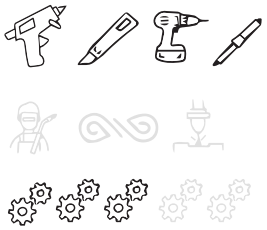
These dishes are more imaginative to create a flavor bespoke to the chef's palette and sometimes even to their specific plate. These recipes are curated by initially picking all the dimensions in need and then filling them with the ingredients at hand. For ease of setup of full dishes especially, knowing the possibility of available ingredients in one's fridge or even living room or that weird box of stuff underneath your bed helps narrow down the overwhelming options.

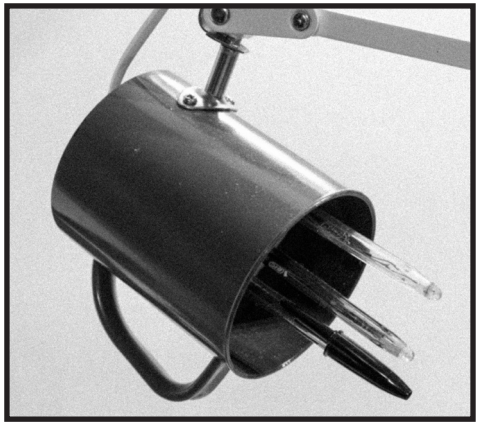
In these recipes, since the aim could be to build a bespoke solution to one's specific needs, the dimensions should be pre-determined before with a normal morphological analysis, then followed by the ingredients that one has available, which have dimensions attached that they can fulfil.
--

For interfacing, it is also handy to have certain extra tools around, while these are not mandatory, measuring devices such as calipers or tape measures might come in handy for your recipes. Note these down in your recipes where relevant to make sure the next time you cook, you do not forget.

Within the nature of the Samsara framework, all the ingredients listed are suggestions with the initial setup of the recipe, but the chefs have all the freedom to pick and choose their own flavors of ingredients that would fulfil the dimensions need to their likings.

3. RECIPES





Hold my Cup Lamp [Sauced with a Mug]

Lamps are an essential everyday dish which can be consumed at many different times of the day. A lamp can have many dimensions as demonstrated in the table below. In this recipe, we cook a lamp from its remainders, as the old lightbulbs cannot be found anymore, while adding it a surprize new function by the handy utilization of a mug. The attached mug also provides a grab handle to readjust the positioning of the lamp.

MAKE SURE that the LED Light source picked, and the Power supply picked have similar voltage levels stated within their limits to avoid any health hazards.

Optional Specialty tools:
- Multi meter

Necessary Spices:
- Electrical tape (or heat shrink tubing)

INGREDIENT OPTIONS →

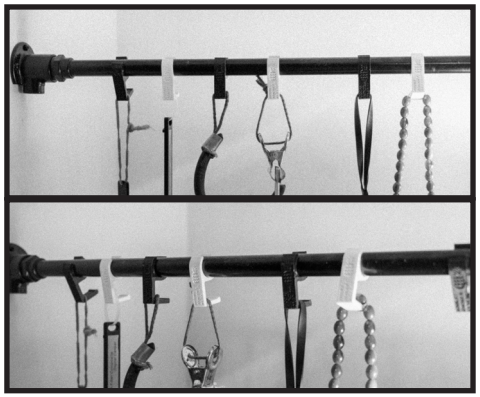
DIMENSIONS ↓			
Arm	Broken Lamp		
Surface Mount	Broken Lamp		
Light Container	MUG		
Light Source	DC LED Light		
Power Source	Phone Charger		
Power Switch	Broken Lamp		

SUGGESTED INGREDIENTS BY RECIPE

Steps

1. Lay your ingredients before you and arrange everything needed
2. Drill two holes on the side for the fasteners of the new lampshade foraged. In this recipe we will be utilizing a MUG.
3. Drill a new hole on the bottom of the MUG to pass through the cables of the original lamp. Since we will also be converting this lamp to utilize an LED light, this step also means that we are removing the old AC powered bulb holder.
4. We will be reutilizing the original cable of the lamp to retain the functionality of the switch, so route the original cable into the MUG.
5. Screw the MUG onto the hinge of the Arm by the holds on the side.
6. Solder the LED’s negative and positive terminals to the original power cable’s terminals.
7. Cut the Power cable’s plug end off to reveal the cables.
8. Since LED’s are low powered, we will be utilizing an old phone charger. Cut the phone chargers tip off to reveal the RED and BLACK cables.
9. With the phone charger connected to the wall, touch the two cables of the charger to the two exposed cables on the lamp’s original cable to make sure that the orientation of the cables is correct. (You may use the continuity mode on a multi meter to skip this step in a slightly safer manner)
10. Once the correct orientation is found, solder the cables to the corresponding positive and negative terminals.
11. Tape off any exposed copper parts on the cables.
12. Install lamp on the desired surface with the original mounting method.
13. Your Lamp is ready to eat

3. RECIPES



Tool wall [Full Dish]

Essential tools are handy to have within an arm’s reach. In this dish we aim to bring all of the favourite tools you have around you literally within an arm’s reach from your work surface. In this recipe we will be cooking a piping system that your tools can hang from using bespoke 3D modelled hooks for your specific piping.

Optional Specialty tools:
- Caliper

Necessary Spices:
- NA

INGREDIENT OPTIONS →

DIMENSIONS ↓			
Body	Metal Piping		
Wall Mount	Piping Adapter		
Body Connections	90 Degree Pipe		
Wall Fasteners	Screws		
Tool Extensions	Rope		
Tool Mounts	3D Designs		

SUGGESTED INGREDIENTS BY RECIPE

Steps

1. Lay your ingredients before you to arrange everything needed
2. Cut the piping according to the height you want the piping to be off from your workspace. We will be utilizing an ARMS LENGTH as a unit.
3. Screw your wall mount for piping onto the table OR the wall to your liking
4. Attach your desired length of pipe to the wall mount. If Desired, attach the other end of the pipe to the ceiling OR the table with another 90 Degree adapter.
5. Measure your pipings diameter for the 3D Model. If using off the shelf parts or any other method, SKIP this step.
6. Prepare your tools for installation on the PIPE by connecting a rope loop around them. IF they have holes, thread them through, IF NOT, Tape or Glue the ropes to the handle of your desired tools.
7. Attach the HOOKS on the pipe. The HOOKS will be staying on the pipe, while retaining the option to add/remove in the future.
8. Place your tools on the pipe
9. Your dish is ready to serve.

3. RECIPES

World Record Rack [Full Dish]

Vintage lovers and hipsters alike, just like the music in them, records are an interesting aesthetic to them, for ease of locating your favourite tunes in the sea of Flavors, just like a cheese plate, we will be assembling a record rack.

Optional Specialty tools:
- Water Level

Necessary Spices:
- Measuring Tape
- Pencil

INGREDIENT OPTIONS →

DIMENSIONS ↓			
External Rack Mount	Screws OR Hooks		
Capacity	3-4 Records		
Load Securing	Horizontal Lip		
Body	Wood Strips		
Horizontal Support	Thin Strips of of Wood		
Internal Rack Mount	Wood Glue OR Screws		
Internal Vertical H	35-40 CM		
Horizontal Distance	33-35CM		

SUGGESTED INGREDIENTS BY RECIPE

Steps

1. Lay your ingredients before you to arrange everything needed
2. Multiply the Internal Unit Vertical Distance by the Capacity to reach the overall length of your MAIN vertical body part dimensions.
3. Measure the size of MAIN vertical body part on your WOOD and cut two thin pieces.
4. Measure your Horizontal distance on your WOOD
5. Cut YOUR CAPACITY times narrow parts and YOUR CAPACITY times wider parts to serve as your lip
6. Glue together 1x of the Narrow Horizontal Distance Parts to 1x of your Wide Horizontal Distance Part to create an L shape that will support your record. Repeat until you run out of Horizontal Distance Parts
7. Mark your Internal unit vertical distance on your MAIN vertical body part as many times as your CAPACITY.
8. ATTACH your L shaped record support parts to both MAIN vertical Body parts on the points you marked at step 7 either by SCREWING or GLUING.
9. HOOK or SCREW or ATTACH FEET on your rack to place it on SURFACE.
10. Your dish is ready to serve.

4. PLACE YOUR RECIPES HERE

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Optional Specialty tools:
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Necessary Spices:
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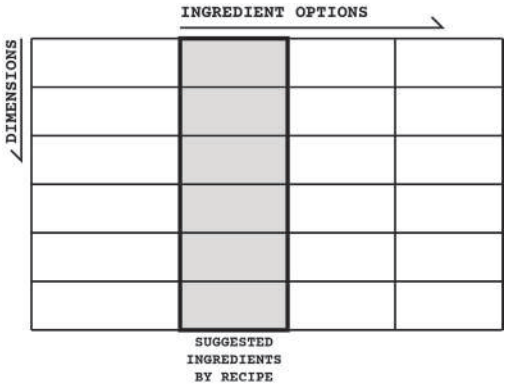

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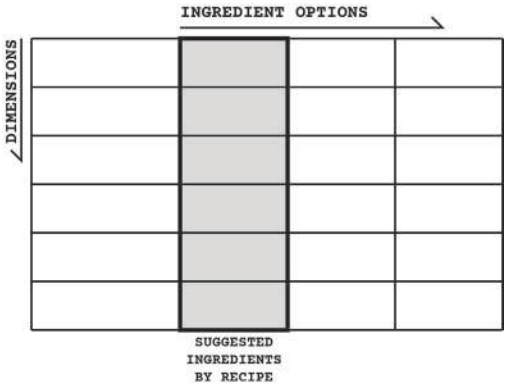

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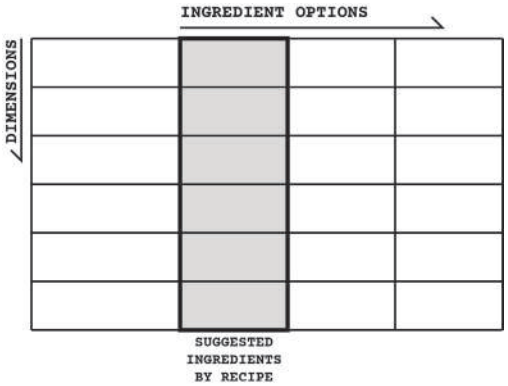

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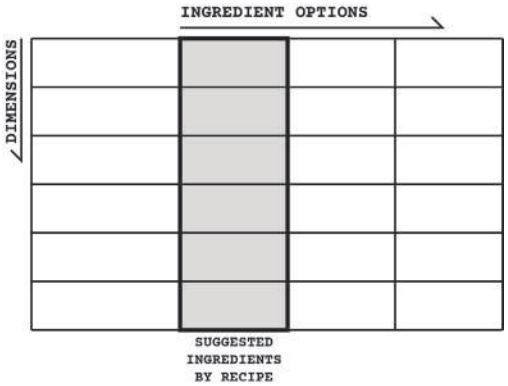

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References

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