

Understanding the non-comprehensible

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The exploration and experiment were first inspired by my conversation with my mother about certain political events that were happening. When I pointed out how she was generalizing certain marginalized group and making assumptions about them, she said, “isn’t that how we learn everything? Isn’t everything you know come from generalization?” These questions stuck with me. If we just recently realized at least certain generalizations are more harmful than helpful, what does that say to our entire learning system?

This exploration started by looking into how different philosophical theories explain how we gain, or whether we even have the ability to gain knowledge. Empiricism states that knowledge comes primarily from our senses and experience. Similar to our current observation and experiment style. Empiricism emphasizing on the “Bottom-up” logic structure, where based on observation and experience we build hypothesis, and the observations and experience are the foundations and evidence of the observations being (at least empirically) true¹. On the other hand, Skepticism questions whether obtaining and acquiring knowledge is even possible. The classic examples, such as the Raven Paradox, or the falsifiability statement on “all swans are white”, are to question and point out the flaws in deductive-nomological model² in our scientific model of learning. However, these thought experiments and arguments are only focused on examining whether our experience is sufficient for us to acquire knowledge. Yet

¹ Hempel, Carl G. "Studies in the Logic of Confirmation (I)." *Mind*54, no. 213 (1945): 1-26.
<http://www.jstor.org/stable/2250886>.

² Woodward, James, "Scientific Explanation", *The Stanford Encyclopedia of Philosophy* (Fall 2017 Edition), Edward N. Zalta (ed.), URL = <<https://plato.stanford.edu/archives/fall2017/entries/scientific-explanation/>>.

Rationalists such as Kant, Descartes set logic and rationality at a high priority, and firmly believed that reasoning can guarantee, and is the only way to truth³. Nonetheless, they have never questioned the validity of logic itself. With all three different views on how we should obtain knowledge, regardless to how different their methodologies are, the structures of their arguments still follow the logical procedure. The logic used to argue each argument still follows the traditional syllogism. It is then concerning to realize, even when we are questioning our ability to obtain knowledge based on our mental model, we are still conducting this investigation using the exact same model that is in questioning.

Aside from questioning our own rationality and the foundation of it, I was also inspired by other classes I was taking at the same time. Both of my *Machine Learning* and *Dark Data* courses have been focusing on how machine and algorithms process information. One concern raised in both classes is that the algorithms is processing and calculating information at a speed and dimension we can't comprehend, then how will we be able to determine how is it going to be implemented. In addition, in my *Interaction Design in the Wild* course, we were focusing on observations, researches and interviews to get a better understanding of the animals we are designing for. All of these tasks include attempts to understand things and behaviours that are not intuitive to human. The research and experiments done on animal behaviours still uses the same system that makes sense to human brain. Yet I am not here to dismiss or question the

³Immanuel Kant, Critique of Pure Reason.

legitimacy of such method, but rather to state my observation: Even when we are interacting and actively trying to understand non-human beings, we are still projecting our way of thinking into understanding these beings. Similarly, I found myself constantly trying to limit variables, control the environment, and find patterns in how things behave. Once a pattern emerges then I will presume that I have created an understanding on how what element in an algorithm is affecting it's calculation, or what certain behaviour means to an animal.

Clearly, all these attempts on understanding machines or animals are still constrained in the same reasoning and logic framework. The attempt of understanding something not human is then still being put into a "human-understandable" framework. Trying to find the correlation and causal Relation patterns that fit within our ability of understanding and our mental model. This then raised the question of if we will ever be able to understand things out of comprehension? Things have no patterns, no correlations. Things that are out of our imagination?

Looking at how we perceive things, acquiring knowledge, and learning about this empirical world through experience. We gain knowledge through experience, then categorize them and label them as facts in our mind after many encounters with that experience. The logic we use to process information and the pattern recognition process has never been questioned. What about things we can't seek patterns from? Things don't follow our logic? Do they just get write off as minor irregularity? How will we understand them? Or will we ever be able to?

These questions have driven to create my final project, MP. MP is short for *Modus Ponens* as one of the basic inference rules in propositional logic. MP is an

experience and interaction meant to be incomprehensible yet not completely meaningless, to illustrate the idea of “beyond our way of thinking”. The title was formed later, after seeing MP interacting with different people, and how they proceed to interact with it based on MP’s appearance. The deductive reasoning used by people to decide how to interact with MP inspired its name. In addition to its “users”, MP is also a personal exploration and experiment on how we understand, or attempt to understand, things beyond our comprehension. A “test” to see if we are forever trapped in our own thinking. The goal, in terms of making, is for each interaction with MP to be pattern-less, rule-less, intentionally confusing and unavailing. At the very beginning stage of creating MP, a very simple and straight forward idea is to create this entity that dispenses cryptic messages (Fig 1).

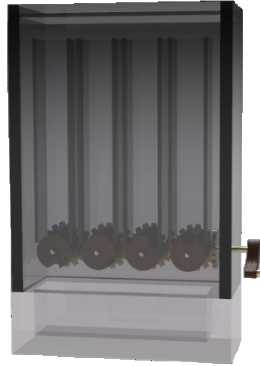


Figure 1. Iteration I on MP

Based on the feedback from my peers and instructors, I realized that the first iteration on MP is not as powerful as I hoped. The exposed interior and mechanism, intuitive interface as well as the linear exchange between MP and its “users”.

Looking more into aesthetics, form, and the burning questions buried behind the ideas, I worked on my second iteration on MP (Fig 2).

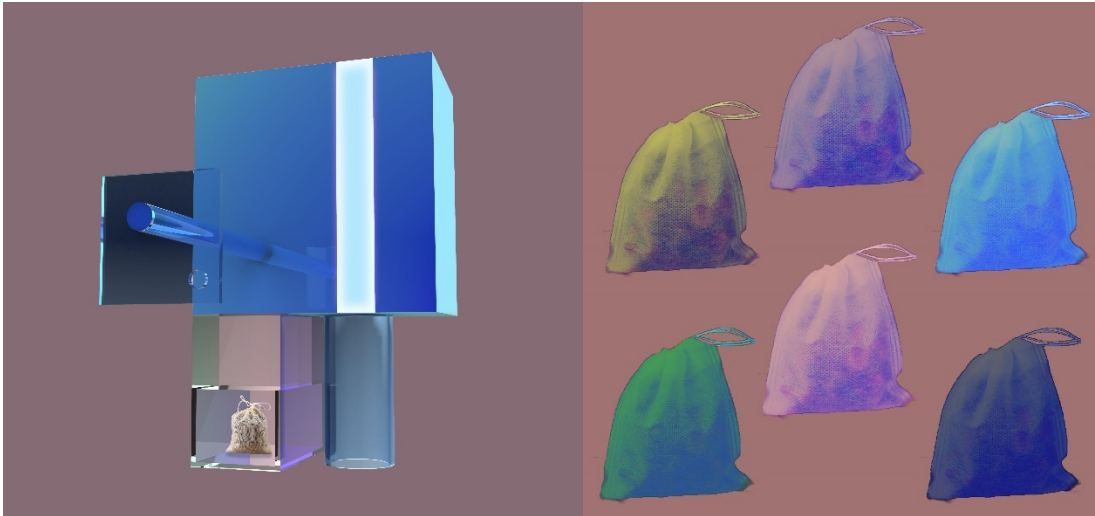


Figure 2. Iteration II on MP

The second iteration on MP, I focused on not only the mechanism of the MP, but the appearance as well, and how through its appearance to give meaning to it. Rather than creating a device or entity that have randomized output, I wanted MP to have meaning to both human and itself. What is then, against our intuition, yet remain valuable? In *The Intertwining of Aesthetics and Ethics: Exceeding of Expectations, Ecstasy, Sublimity*, Jadranka Skorin-Kapov states that sublimity is the common ground in aesthetics and ethics. She believes the element of surprise rises from the discontinuity between one's representational capability and their sensibility (which the recovery will eventually leads to aesthetics and ethics) ⁴. Even though MP isn't focusing on ethics or

⁴ Skorin-Kapov, Jadranka, *The Intertwining of Aesthetics and Ethics: Exceeding of Expectations, Ecstasy, Sublimity*.

aesthetics, the ideas of the disconnection from senses and representation became a helpful notion in creating MP. In addition, in *The World as Will and Idea*, Arthur Schopenhauer states, “Here he obtains a glimpse of a power beyond all comparison superior to the individual, threatening it with annihilation...by presenting a mere immensity in space and time; its immeasurable greatness dwindles the individual to nothing”⁵. Here Schopenhauer was illustrating the idea that knowing one’s nothingness to nature and immerse ourselves with space and time. The beauty of having the knowledge of one’s nothingness and being united with the unknown has also influenced the appearance of MP. Implementing these ideas, the second iteration of MP’s main body is made into a box with reflective material. The idea behind it is to illustrate the unknow with the similar look of a black box, where the internal works of it remains unknown⁶. In addition, with the reflective surfaces, the “users” will only see themselves while interacting with MP. The idea behind this is to subtly portray the action of projecting our own thought process and way of thinking to understand an entity or being that does not fall within our framework.

The bottom of the main body is conducted with a transparent half-open box and a transparent tube. The form and exterior of the bottom parts are intentionally made to be confusing. However, they are both made with transparent material to indicate that is it somehow meant for the viewer being able to see the inside. The content that will be dispensed is designed to be in a bag form with various colors. The decision behind that

⁵ Arthur Schopenhauer, *The World as Will and Idea* Volume I, Osgood, 1883, 265–266.

⁶ Vitold Belevitch "Summary of the history of circuit theory", Proceedings of the IRE, vol 50, Iss 5, 848-855, 1962.

is inspired by the notion “bag-of-words, which is a term frequently used in natural language processing and information retrieval. The “bag-of-words” is a representation of a piece of texts where the grammar and order is lost but only the content and its multiplicity remained in the bag⁷. The bags from MP is then a representation of one of its messages to the viewers. The content within the bag is randomized but filled with human-familiar objects. Borrowing the idea of Uncanny Valley, where the object’s resemblance to a human is very close but not exactly like human, it then creates an unease feelings to the viewers because of its strange yet familiar representation⁸. The goal of MP is not to create disturbing feelings towards its “users”, but in contrary for it to be familiar enough that the “users” feels comfortable and safe to interact, but not too familiar to a degree that causes discomfort or fear. “Users” should be able to feel free to open and examine the bags, if they receive one. However, the form of the MP, and even the process of creating MP is still limited to my ability and imagination as a human being. Therefore, I decided to also stay with the geometric shapes, as it’s consistent with the familiar yet non-human style as the bags.

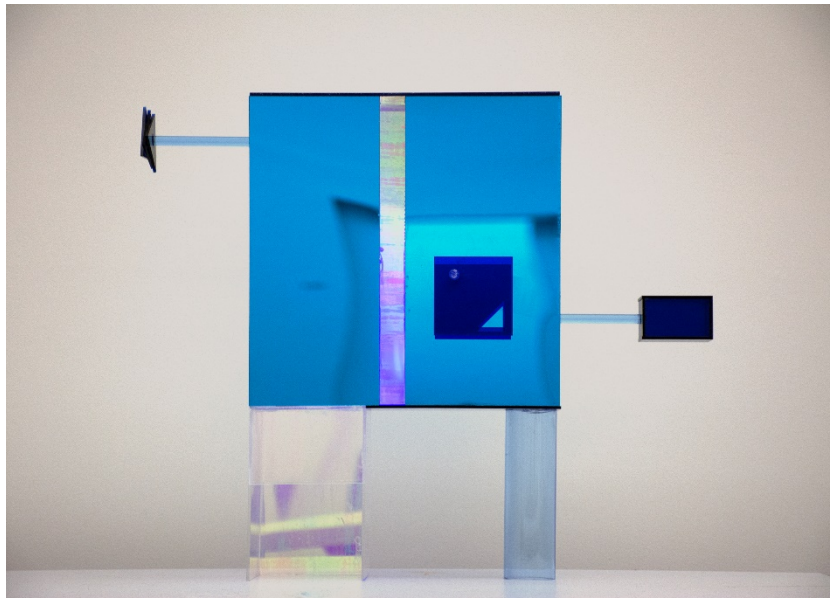
In terms of the human interaction and input. The second iteration of MP has only one “function”. There is a “handle” looking object extend from MP’s main body. It is design to a cube shape instead of an organic, ergonomic shape or a circle which would indicate its function: turning. By turning the “handle” the “users” will the receive a bag from MP. Moreover, the entire body ratio of MP is created based off of the

⁷ Zellig S. Harris (1954) Distributional Structure, *WORD*, 10:2-3, 146-162, DOI: 10.1080/00437956.1954.11659520

⁸ Karl F. MacDorman, Debaleena Chattopadhyay. "The uncanny advantage of using androids in social and cognitive science research". *Interaction Studies*, 2006, 297-337

Golden-Ratio, and then altered to be half of an inch off from that exact measurement. This is also to coherently create the “supposedly familiar yet strange” feeling with all the other parts of the MP.

My third and last iteration of MP, I had couple additions to the previous version (Fig 3).



(Figure 3)

On the third version, based on the feedback and discussion with my peers and instructors. I added more handles, to created total of three handles on MP. Two of them does not function or move. The appearance of each handle still follows the same principle: counterintuitive to what a handle should look or feel like. In addition, the internal structure now will hinder the “user” from getting a bag each time they interact with MP, even if they are using the correct handle. The side has a stopper where it’s difficult to align the handle to the opening of the inner dispensing mechanism without looking. Thus, created an irregularity in its turning-dispensing relationship. This

change is made to avoid linear interactions with MP, and its functionality being too close to vending machine based on the suggestions I received. In addition, I also incorporated a light in the front-face of MP's, where "users" can barely see without paying attention. This was initially added for MP to be more "lively". It also serves the hope I have in terms of us looking into this black box and hope to one day find the possibility of us "escaping" our own brain.

The show case of MP was in my view successful, after observing many "users" interacting with MP, I find some interesting interactions. Most people will ask me for explanation if I were present, which I always declined. Fair amount of people are very persistent in getting things from MP once they found the moving handle. Couple people have tried to open MP to see how it works. Questions such as "are some bags harder to open?", "what's inside?", "Am I supposed to do this?", "I know I'm supposed to get something, am I?" have been asked while I was present.

[Linked to Video: https://drive.google.com/open?id=1n4_1Dgo7ew6X4V0lEa4MQ8PCrRLQraeg]

Although I know this does not answer the questions I initially proposed or anywhere near in getting an answer. However, the journey in creating MP, and to really look into how we think, and to realize that even in questioning this, I'm still stuck in the mental model we have, is extremely meaningful for me. I want to end this journey with philosopher John Locke's notes on looking beyond our comprehension:

"Thus men, extending their inquiries beyond their capacities, and letting their thoughts wander into those depths where they can find no sure footing, it is no wonder that they raise questions and multiply disputes, which, never coming to any clear resolution, are proper only to continue and increase their doubts and to confirm them at last in perfect skepticism. Whereas, were the capacities of our understandings well considered, the extent of our knowledge once discovered ,

and the horizon found, which sets the bounds between the enlightened and dark parts of things, between what is and what is not comprehensible by us; men would, perhaps, with less scruple acquiesce in the avowed ignorance of the one and employ their thoughts and discourse with more advantage and satisfaction in the other”.⁹

⁹ Locke, *An Essay Concerning Human Understanding* 35

Reference

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