



In this first chapter, I discuss the faculty of imagination. I present the two types of imagination that I have conceived of: *simple imagination* and *complex imagination*. On the one hand, what I called *simple imagination* allows us to connect the chaotic arrays of sensory inputs into orderly structured meanings in order for us to perceive things that *all make sense*. This connecting is what I call “reasoning.” The reasoning itself is a retroactive registering of the sensory information into *preexisting* symbolic orders. On the other hand, the *complex imagination* disconnects and rearranges multiple mental frameworks, independently of initial sensory inputs. It entails memories and complex connections of various parts of the brain. This operates in the service of creativity.

### **Simple Imagination**

The noun “imagination” originated in the 14<sup>th</sup> century with the term “image” or “imāgo”<sup>3</sup> in Latin, meaning a likeness. It is formed with the suffix-āgo from the base *im* (seen) in *im-āri* (to imitate), which refers to the mental imitation of what is seen. Therefore, the verb “to imagine” means to form a mental image. According to German art historian Hans Belting, the “image” is defined not by its mere visibility but by its being invested, by the beholder, with a symbolic meaning and a kind of mental “frame.” In his

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<sup>3</sup> Walter W. Skeat, Litt.D., *An Etymological Dictionary of the English Language*, New York: Oxford University Press, First edition 1879 -1882, Impression of 1985, 287.

book *An Anthropology of Images*, he states that an image “is more than a product of perception. It is created as the result of personal or collective knowledge and intention. We live with images, we comprehend the world in images. And this living repertory of our internal images connects with the physical production of external pictures that we stage in the social realm.”<sup>4</sup> His notion of an image posits the interaction between the visibility from external stimuli and the internal interpretation of what is seen. If we accept his notion of an image as the interaction between the inside and the outside, can the verb “imagine” mean the process of the interaction, namely, “to connect” between the sensibility from the external and our internal understanding?

In a similar manner, German philosopher Immanuel Kant gives the in-depth analysis of the role of imagination. In the book *Kant’s Theory of Imagination*, Sarah L. Gibbons focuses on the role of imagination in Kant’s *Critique of Pure Reason*. She says, according to Kant, imagination connects sensibility and understanding: “imagination ‘mediates’ between understanding and sensibility....That is, imagination must synthesize sensible intuitions in such a way as to make them ‘available’ to be conceptually unified and recognized as an object through the categories.”<sup>5</sup> What Kant means is that our mind synthesizes the chaotic array of sensual impressions into an order as a conceptually unified and recognized form. The act of synthesis is therefore also a “making sense” of sensual impressions in order to understand anything about objects. And he attributes this synthesis to the “power of imagination.” In other words, the power of imagination enables us to synthesize sensual impressions in order to obtain orderly organized concepts – the understanding about objects. Kant clearly states the definition of

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<sup>4</sup> Hans Belting, *An Anthropology of Images: Picture, Medium, Body*, Princeton, N.J.: Princeton University Press, 2011, 9.

<sup>5</sup> Sarah L. Gibbons, *Kant’s Theory of Imagination*, Gloucestershire, England: Clarendon Press, 1994, 29.

understanding: “The unity of apperception in relation to the synthesis of imagination is the understanding.”<sup>6</sup> That is to say, imagination helps us to understand what the objects are from the initial sensory input. The imaginative synthesis helps to generate non-physical representation of the object of perception, meaning conceptualization.

However, the imaginative synthesis of the chaotic array of sensual impressions does not directly generate orderly organized concepts: it *leads* to concepts by means of connecting. But connecting of what? A semblance. The imaginative synthesis connects the sensual impressions to concepts on the basis of an affinity in semblance. Let us go back to the term “image” or “imāgo” for a moment. The term “image” means a likeness. By imaging, we are looking for an affinity between the appearance of the sensory input and the appearance of the conceptual representation – between the thing “out there” and the “thing-of-thought” (Gedankending).<sup>7</sup> For example, when we see a flower, what we initially encounter is the material quality of a flower such as its color, shape, size, smell, etc. In this stage, a flower appears to us as a collection of its physical properties. In other words, we see the property of a thing first, then say it is a flower. We determine the thing as what we call a “flower” based on the semblance of a flower in our conceptual understanding. That is to say, imagination synthesizes the sensual properties of a thing, and connects them to their conceptual representation, to our understanding the thing itself. What connects the thing “out there” and the “thing-of-thought” is a semblance.

Let us examine the faculty of signs in relation to the “thing-of-thought.” According to modern semiotics, a sign cannot exist by itself, but it exists in relation, first to a referent, then to other signs, meaning, the formal structure of language. Words are

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<sup>6</sup> Ibid., 28.

<sup>7</sup> See Slavoj Žižek, *Tarrying with The Negative*, Durham: Duke University Press, 1993, 151.

the labels that we give to things and people as nouns. We begin to use words as verbs that describe actions and processes. The words hold sentences together and give them a particular linguistic structure. And the linked structures of signs have been formed throughout history, culture, and customs from generation to generation. This is how particular meanings are generated for various linguistic signifiers. When we learn a language, preordained meanings come into us. For example, the signifier “white” generally means “pure” or something positive in Western culture. However, in China, “white” means “death” or something negative. Here we see the role of culture in the construction of meaning, i.e., certain signs are assigned specific meanings in one culture versus another via an array of historical contingencies. Let us take another example. In American culture, the number thirteen is not a mere number. It is associated with symbolic meanings as evil, unlucky, bad, etc. When a bad thing happens on Friday the 13<sup>th</sup>, some people attribute the bad event to the number; i.e., one might say, “I broke my leg *because* today is Friday the 13<sup>th</sup>.” That is to say, we accept concepts and meanings via associating one sign with another so they become linked and connected in order for each of us to *make sense* in understanding and interpreting things or events, even though it is not objectively logical.

On the other hand, to the neuroscientist, this process of understanding is provoked by the interaction between the right hemisphere and the left hemisphere of the brain. In his book, *The Future of the Mind*, Dr. Michio Kaku explains:

The right hemisphere controls sensory attention and body image; the left hemisphere controls skilled movements and some aspects of language.... The left brain is more analytical and logical. It is where verbal skills are found,

while the right brain is more holistic and artistic. But the left brain is the dominant one and makes the final decisions.<sup>8</sup>

The two hemispheres complement each other. The sensory-perception in the left brain quickly becomes a chain of associations, a reference in the right brain for making meaning: we “reason” about it. The reasoning itself is a retroactive ordering from chaotic sensory inputs into the logical frames of reference. However, the “reasoning” is not always *objective*. It rather depends on the subject’s individual way of linking sensory input. According to L. Michael Hall in her book, *Neuro-Semantics*, every person has unique and individualized psycho-logics. She means “how you reason inside yourself (your logics) is ‘logical’ to you and within you, even when people on the outside may not find it logical. Whatever meaning you give to something creates a psycho-logical structure— your psycho-logics.”<sup>9</sup> Therefore logic and reason might be, for the most part, subjective.

Accordingly, it is the matching of the sensory experience of the body to mental frames of reference that reside in symbolic orders what I have called *simple imagination*, the immediate connection between sensibility and understanding. It operates in the service of reason. On the other hand, we humans do not just think, but we can think that we think. By which I mean, we are capable of thinking about thinking: we are the species of meta-thinking. I attribute the capability of meta-thinking to *complex imagination*.

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<sup>8</sup> Kaku, Michio (2014-02-25). *The Future of the Mind: The Scientific Quest to Understand, Enhance, and Empower the Mind* (Kindle Locations 439-441, 759-761). Knopf Doubleday Publishing Group. Kindle Edition.

<sup>9</sup> Hall, L. Michael (2013-03-28). *Neuro-Semantics* (Kindle Locations 814-817). NSP. Kindle Edition.

## Complex Imagination

The *complex imagination* can be seen as the act of curating multiple memories. Like a curator who organizes and connects objects in order to generate new meanings, we connect different sets of memories when imagining something *new*. For example, let us imagine a cup. But this time, imagine a cup that you have never seen like a cup made of a cloud in the sky. I may imagine the Earth as a cup: the Earth is a large inside-out cup that contains water. In the two examples above, I do not simply recall an image of an ordinary cup or a known concept of a cup that is preexisting: I connect different sets of images or conceptual logics. This compound connection is what I call “complex” imagination. In order for this complex connection to happen, multiple memories should be involved. It may sound like a reductionist viewpoint, but the recent neuroscience discoveries, using MRI scans, can suggest that memory and imagination are highly related. In other words, the hippocampus, a brain part that is responsible for forming the long-term memory, has a crucial role in imagination.

What is the hippocampus? The hippocampus is a part of the brain that functions as a gateway for short-term memory to be transferred into long-term memory. Without a functioning hippocampus, a person cannot be able to record new experiences, recall the immediate past, or project the future. To be specific about how memory operates, sensory inputs first arrive to a temporary station called the thalamus that directs the information to the various sensory parts of the brain. Then the information goes to the prefrontal cortex, which functions like a command center in our brain. The prefrontal cortex forms short-term memory that can last from seconds to minutes. In order to store them long-term, the

information must go through the hippocampus. However, according to recent discoveries, the hippocampus does not function like a storage house, but rather it re-wires different parts of the brain in order to recall the experience of the past. In *the Future of the Mind*, Kaku states: “this new theory says that memories are not linked spatially but rather temporally, by vibrating in unison. If this theory holds up, it means that there are electromagnetic vibrations constantly flowing through the entire brain, linking up different regions and thereby re-creating entire memories.”<sup>10</sup> This means that the memory of an event is distributed to various regions of the brain, and a single part of the memory can re-connect to other parts of the brain, collecting all the fragments together to recall a whole event. For example, the smell of a fruit can inspire other sensorial, linguistic, and conceptual memories, recalling a whole event of the past. Therefore, the hippocampus re-connects the information from various regions of the brain. This connection is what we call memory.

How is memory related to imagination? I infer this from the recent studies that show how the hippocampus works when a subject stimulates the future or imagines new experiences. The studies by Dr. Kathleen McDermott of Washington University suggest that the purpose of memory is to predict the future. Kaku states:

long-term memory evolved because it was useful for simulating the future. In other words, the fact that we can remember back into the distant past is due to the demands and advantages of simulating the future. Indeed, brain scans done by scientists at Washington University in St. Louis indicate that areas used to recall memories are the same as those involved in simulating the future. In particular, the link between the dorsolateral prefrontal cortex and the hippocampus lights up when a person is engaged in planning for the future and remembering the past.<sup>11</sup>

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<sup>10</sup> Kaku, Michio (2014-02-25). *The Future of the Mind: The Scientific Quest to Understand, Enhance, and Empower the Mind* (Kindle Locations 1920-1922). Knopf Doubleday Publishing Group. Kindle Edition.

<sup>11</sup> *Ibid.*, Kindle Locations 2021-2025.

The hippocampus is highly active when a subject projects the future. This means that we use the memories of past events to create something that is not there yet, because of evolution I suppose, in order to survive. In this sense, we *remember* the future: we draw upon memories of the past in order to predict what will come in the future. Other studies done by Dr. Demis Hassabie and his colleagues of Cardiff University also show that patients suffering from hippocampal damage lack imagination. Their patients show the absence of a holistic representation of the environmental setting when imagining new experiences.<sup>12</sup> The new-ness, therefore, results from the mixture of multiple memories of the past.

In this regard, I assume that when imagining *new* experiences or the future, we recall memories of the past, and redirect the connections with the various information in the brain in order to construct new imaginative situations: imagining something *new* is, therefore, the convoluted recombination of the past. I call this rich connection *complex imagination*. While the simple imagination connects initial sensory inputs to the conceptual understanding, the *complex imagination* entails much more rich connections among different parts of the brain in order to create *new* mental events, thanks to the ability of the hippocampus to connect the multiplicity of the past experience.

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<sup>12</sup> See Demis Hassabis, *Patients with hippocampal amnesia cannot imagine new experiences*, <http://www.pnas.org/content/104/5/1726.full>.