De/construction of the mind

Tom Rochette <tom.rochette@coreteks.org>

November 2, 2024 — 36c8eb68

0.1 Context

0.2 Learned in this study

0.3 Things to explore

- The black box concept is only explored as a mean of storage, but not processing. What happen when it is used for that purpose?
- What is the "refresh rate" of human beings? Is it a range, or is it the same for everyone? Is it specific to each system (different per sense modality)?

1 Overview

All senses are comparable to data streams.

- Packet of data
- Each packet contains a body of information/data
- Additional headers/structure facilitate the transport of data (think OSI model)
- A packet must contain a temporal indicator
- For the mind to be a computational model, it needs to be discrete, which means that the world is sampled at time regular intervals

If we see the mind as a black box, we can say that there are 5 afferent data streams, one per sense. For this article, I will only concentrate on sight and hearing. Hopefully the method is generic enough that the sensory modality itself does not matter.

The black box mind has to be able to memorize things. It must also have the ability to recognize previously "observed" streams of data (recognize that it already heard a specific sound or seen a particular object). To recognize, it has to be able to map multiple experiences to a single identity.

One can think of the black box as composed of many smaller black boxes. Each sub black box would deal with its own channel. It would have its own dedicated storage area and format/structure. This is known as the modular approach.

One can also think that the black box is monolithic, that is, there are no specialized units. Instead of dedicated and specialized storage, you only have a general purpose storage medium. The brain is however not truly storing anything, but merely rearranging itself to contain what it has experienced. A good analogy of this idea is that instead of having code and data, your code is changing itself to incorporate the data as one of its parts.

When one experiences a data stream, there are many things that appears to correlate to that event. For one, events have a spatio-temporal proximity relation between one another. A word is composed of a series of sounds that come one after the other. Any other permutation of that series of sounds would result in something different, which may or may not be a valid word in the current language being used.

The mind is generally used to process what it perceives and then act on this perception. However, I will suggest for the time being that we ignore this part of the mind's pipeline and only consider perception and processing.
Based on "The Brain: The Story of You", I apparently cannot do that, as the perception-action cycle is critical to the development of some systems such as vision.
Without intention/purpose, there's nothing for the system to optimize.
However, where are those intentions coming from?

2 See also

3 References