**PSY 2310 - Homework #1**

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The human mind is comparable to a personal computer both structurally and functionally. Computers are generally composed of the following: a motherboard, a processor, random access memory, a hard drive, and a power supply. (GCF Global, 2024) The simplest of the structural analogs is the power supply which mimics the role of the hypothalamus in humans, it has agency over whether the ‘machine’ is turned on or off. (Cleveland Clinic, 2024) The hard drive is akin to our long-term memory, the space in which information is preserved unless removed through explicit means such as therapy, injury, MKUltra experiments, and etc. Unlike the hard drive, a computer’s random-access memory is where no information is preserved, it is either committed to long-term memory or forgotten on the arrival of new information, much like our short-term memory. A computer’s processor is a less strict analog, whereas a single replaceable chip is responsible for a computer’s ability to perform actions; the majority of our brain is dedicated to this action. And finally, the motherboard, which contains the base functionality of the computer like the communication between and the ability to leverage components, the lizard brain of the computer. (McLean, 1990)

The more notable elements of the Computational Theory of the Mind however were the functional similarities of computers and the human mind. Computers take an input, process that input into usable information, generate an internal response to that information, and then construct an outward response to communicate that information. If you are to consider stimulus as ‘input’, the mind performs a similar process. An individual receives some form or stimulus, their sensory organs translate into a brain-readable state, then cognition occurs, and when applicable an outward response is constructed. However, much to the chagrin of behavioralists, the step where ‘cognition occurs’ is actually explored instead of being left as a black-box. And this framework is an incredibly practical way to explore the phenomena that is sentience and consciousness without descending into the abyss of ‘I think therefore I am’ and ‘what is living?’.

There are also some key differences between the human mind and computers. Computers have the luxury of data types and standardized inputs which in turn mean the way they ‘perceive’ the world is common to all computers. In humans, it cannot be assumed that stimulus is experienced in the exact same way. This is partly due to the fact our faculties for perception are each built custom. Though a bulb may be objectively some quantity of lumens in brightness, the way in which a blind person’s eyes and a sighted person’s eyes transduce and relay that stimulus to the brain can be wildly different. This introduces an almost guarantee of variance on the parsing of the stimulus.

That aside, a defining element of the Computational Theory of the Mind is the internal processing of information. Both man and computer leverage a series of systems, protocols, directives, and routines to interpret information. In both, some routines may be autonomous like a firewall blocking a malicious file or the fight-or-flight reflex triggering in response to danger; while others may be performed manually (which in computers would represent a decision point for a user, all things lead to Rome).

# Bibliography

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