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CSC366

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Reading Assignment

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1. The main topic of preface 2 deals with subconscious processes that take place while the conscious mind seems to only take in the input and give the output, without doing the work. The mind seems to have multiple processors, most of which run in the background. It's not until the subconscious can not find a solution that the conscious mind, or main processor, takes over. The conscious mind appears to be the most powerful, if powerful can be thought as similar to problem solving. The conscious mind knows how to pick things apart well enough to make the unconscious mind find a solution.
2. A "glom" is a jumbled grouping of letters.
3. Glomming is the imaginary process the mind goes through when unscrambling letters. First, the glom is thrown into the air, then falls back down into a different combination. If the glom forms a word, there's no need to continue to unscramble. If it does not, throw the glom, or jumbled letters, back up and see what comes down. It often is a combination that wasn't seen before.
4. To describe "virtual objects", Hofstadter uses an analogy of a ball in a video game. He states objects in our mind move similar to the way a ball moves n a videogame. The ball exists neither as a physical object or group of pixels, but instead it's abstract. It contains its own identity and behavior and floats on the hardware, without being anything like the pixels or hardware it exists on. A virtual object floats through our neural "hardware" the same way, without appearing as the hardware on which it floats.
5. Hofstadter believes the purpose of the anagrams is that over time, when a person becomes an expert, their minds have been optimized to reorganize and reinterpret thoughts. This does not

mean every person who becomes an expert in anagrams will be a genius, but they will have developed stronger skills.

6. The biggest idea coming from Jumbo versus Brute Force is that the cognitive mind functions much different than what may be the most effective way.
7. The Hearsay II project seems to function similar to the brain. It would run its processes through a blackboard and anytime the process became too difficult for the blackboard, it would consult knowledge sources. This sounds familiar to the anagram demonstration Hofstadter mentioned, where the brain seemed to unscramble the examples by itself, without conscious effort. When the unconscious mind could not decipher a result however, it would consult the conscious mind.
8. Hofstadter believes the finite regression of preconditions allows for the most precise understanding of the underlying issue at hand. With such specific precursors, the program can identify the issue based on the precursor it's addressing.
9. Parallel terraced scan is a search mechanism where the algorithm methodically eliminates portions of desired outcomes a few at a time. At each step, the algorithm determines which of the next outcomes is the most desirable, until eventually one is narrowed down.
10. Hofstadter used Indiana University's Greek life tryouts as an example of parallel terraced scan. Women would selectively choose which sororities to visit. After each weekend, they would be further limited to which sororities they could attend, while at the same time, sororities only invited so many "rushees". Both sides reduced the amount of acceptance from the other.
11. Another example of a parallel terraced scan in real life could be the United States election process. As voters decide which candidates will continue, the candidates also decide which of their voters they will attempt to appease more. This repeats until only one candidate remains, the president.

12. Hofstadter's thoughts on the relationship between Jumbo and reading are interesting. He believes the mind seems to function in a similar way, where we break down each word we read, find the most suitable outcome for it, and read it as such in milliseconds, without realizing the thought we've put into each word. One example he provides is in the phrase "no nonsense." Our brains could easily interpret this phrase as "no-no-nse-nse" but instead, we find value in the text in front of us as words. Another word we interpret quickly that could be seen differently is phone. We automatically associate the p and h together as an f sound, but it could be read as "p-ho-ne." Our brains, instead, attempt to find meaning in the words we use.