Use of Analogy in Cognitive Systems Fields

Using analogy in explanations can lead to increased understanding of material. Analogies can be used in various areas of Cognitive Systems to explain a range of topics. Specifically, analogy can be used to explain linguistic recursion, the role of philosophers, and exception handling in computer science.

In linguistics, recursion refers to the way in which a language component can contain another component of the same kind, in order to create infinitely long sentences. One way to explain this concept is by making the analogy to the Droste cocoa box, on which there is a picture of a woman holding the same box of cocoa that she is on. This analogy is useful in demonstrating the way in which a component can be inside another component of the same type, by using a pictorial depiction of a potentially infinite recursion.

In the area of philosophy, Plato’s allegory of the cave is an analogy explaining the role of philosophers in the world. This analogy describes a row of prisoners who are tied up so that they can only see shadows upon a wall, and believe these shadows to be reality. The philosopher is explained as a prisoner who breaks free and comes to realize that these shadows differ from reality. This analogy helps to explain the philosopher as one who sees the truth about the world and shares this knowledge with others.

In computer science, exceptions in software signal that an error has occurred. Exceptions can be passed from one function to another and dealt with at the appropriate level. This notion of exception handling can be explained with the analogy of a hot potato: Someone throws a hot potato into a group of people. If the catcher is wearing oven mitts, they are able to hold onto the potato (handle the exception); otherwise, they re-throw the potato (propagate the exception) until someone with mitts handles it. This analogy helps to explain how exceptions can be handled or propagated, by comparing an exception to a physical hot potato that is either handled or re-thrown, depending on the catcher.

Analogy can be used to explain various concepts in Cognitive Systems fields. In particular, analogies are useful in explaining recursion in linguistics, the role of philosophers, and exception handling in computer science. In each of these cases, analogies aid understanding by comparing an abstract concept to a tangible or more concrete situation.

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2 Ibid.