

Two key assumptions of the cognitive approach



The two key assumptions that I am going to describe and discuss are key assumptions one, the information processing approach, and assumption two, the brain functions like a computer. Key assumptions one and two is about how we process information in our minds, and the various ways that we do it. Key assumption one assumption is based around one main idea which is that there is an input, process and an output.

This idea was then developed a bit more by the Broadbent Filter Model, this was the theory that some information received by our senses is given more attention than some other information; therefore some information is gained and lost. Broadbent believed that that in certain situations a bottleneck situation would occur, an example he used was a cocktail party. This example is used to demonstrate his theory of selective memory, the fact that a person could only really remember the few details about the many people that they had met at the party. Broadbent's model was based around a sensory buffer which was just a short term store then moves onto a selective buffer and then onto the long term memory or a limited capacity processor and then finally onto the response processes. This was to be later on developed by Treisman's model. Treisman's model still retained much of the architecture of Broadbent's filter model, however he developed the idea that no information from stimuli was lost but that it was just attenuated and available for higher level processing.

However both of these models seem to be too linear. Other ways are bottom up processing and top down processing. Bottom up processing is stimuli entering or short term memories and if it is not used or rehearsed it decays and if it is used it transfers to the long term memory. Top down processing is

the way the brain processes information based on past experience, stereotyping and schemas.

A model that is based on this is one of Neisser (1976) called the Cyclic Model, this model shows how the brain could affect information that enters because of past top down processing, our moods and emotions and the context the information is presented to us. An example of this is witnessing a car accident, a persons emotions might have been seriously affected them because of the accident, that it would lead them to exaggerate the seriousness of the accident. Alternatively parallel processing is unlike that of Broadbent's and Neisser's model which are both flowing one way. Parallel processing involves carrying out two or more tasks at the same time.

Examples of this are writing and talking at the same time, speaking on the phone and driving at the same time. The second key assumption I will describe and discuss is that the brain functions like a computer. This key assumption basically compares the human brain to a computer. The human brain and a computer have many similarities likewise it has many differences. Similarities that both possess are: the use of language, the ability to make choices, recognise objects, solve problems, and selectively attend to information and also the ability to develop knowledge. However computers are really different to the human brain.

The goal for computer designers and software programmers is to develop a computer that can simulate a model of the human cognitive function.

Differences that exist are that computers have no emotions and that they have no real understanding of what they are actually doing. Computers can

only “ think” in abstract symbols. To the computer the symbols are meaningless and have no connection to what it actually represents to a human. The term AI (artificial intelligence) is used in the in the broadest sense of the term because I think that computers cannot really put any meaning to what they are doing, they have no ‘ content’ only ‘ form’. For the computer there is nothing “ outside” it to which symbols and numbers refer which is why they have no ‘ content’ only ‘ form’.

It is only then does the human programmer attach meaning to the symbols and numbers. However the brain still does function like a computer in some ways as is explained in key assumption one.