

What 'Mind' Means To Me

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The 'organ of interest' for Cardiology is heart. For Neurology, it is brain. What is the organ of interest for Psychiatry? Is it brain, again? Or is Psychiatry the study of disorders of mind?

But the moment we say mind and brain, a set of questions arises: What is mind? Is it different from the brain? What is the relationship between mind and brain? Is mind a real entity or a hypothetical entity (like the equator)? In order to use the terms 'mind' and 'mental' in Psychiatry, we need to answer these questions.

Although mind is created in the brain, it is not the same as brain. Commonly, people say that mind-brain relationship is function-structure relationship. But this is a very superficial statement. If we want to understand the nature of mind and mind-brain relationship precisely, we have to study it from three perspectives:

- (1) Mind as the aggregate of everything that we are aware of
- (2) Mind as an active functional organization capable of receiving inputs and processing them to produce outputs
- (3) Mind as the User Interface layer of the four layers of software present in the hardware of the brain

First perspective

Mind is the aggregate of everything that we are aware of - sensations, beliefs, wishes, emotions, the attention, mental abilities and all the mental events. Everything that we are aware of can be categorized into these categories. Thus, these are the components or parts of the mind. These parts are 'functional parts' that are created in the 'physical parts' of the brain. We are 'aware of' the functional parts of the mind, but we are 'not aware of' the physical parts of the brain (neurons, synapses etc.).

Second perspective

Mind is an active functional organization capable of receiving inputs and processing them to produce outputs. The mind receives many inputs: from surroundings, from body, from stored memories. All the functional parts of the mind (described above) are interactive parts. Whenever an input arrives in the mind, these functional parts interact with one another and with the input resulting in the processing of the inputs and production of outputs.

Typically, the mind processes every input in seven steps:

1. **Receiving the input:** When an input reaches the awareness of the person, we can say that it has reached the mind.
2. **Identification (or interpretation)** of the input
3. **Importance Recognition and selection of the important input** - from among all the inputs that the mind receives at a time
4. **Detailed Event Analysis:** What has happened, why it has happened, what is likely to happen in future, what could have happened
5. **Wish Fulfilment Analysis and production of emotions:** wishes are compared with different facets of the input to know whether they are fulfilled or antagonized. If a wish is fulfilled, we become happy. If a wish is antagonized, we experience unhappiness (sadness, fear or anger).
6. **Decision about action:** Out of different wishes, some wish is chosen as the decision for action. For example, 'wish to buy this expensive dress' versus 'wish to save money'
7. **Execution of action:** This is the output from the mind.

Thus, the mind processes a single input in these seven steps. But the mind receives many inputs simultaneously. We can move the attention of the mind sequentially from one input to another, thereby processing many inputs. For example, a driver can receive and process many inputs coming from fellow passengers, the road and the car while driving. Thus, mind is not just a random list of functions such as emotions, memory, perceptions etc. But mind is an active functional organization of specific interactive functional parts that is capable of receiving many inputs and processing them to produce many outputs.

Third perspective

Mind is the User Interface layer of the four layers of software present in the hardware of the brain. To understand this 'four layers of software' concept, we should first understand the four layer nature of the computer software. What we see on the computer screen is the 'User Interface' layer of the software (e.g. Powerpoint, Google etc.). This is the layer that we 'are aware of'. Whatever command the user of this interface gives (e.g. 'copy'), is converted into the High Level language of the software (such as Java, HTML etc.) which is the second layer of the software. This command is then converted into Assembly Language instructions. This is the third layer of the software. The command is finally executed in Binary language which is the fourth layer of the software present in the hardware of the computer. We are 'aware of' only the User Interface layer. We are 'not aware of' the other three layers of software or the hardware where all the processing takes place.

The software of the mind, too, has four layers. All the thoughts, emotions and everything that we 'are aware of' (described above), is the User Interface layer of the software of the mind. Each thought results from the temporospatial firing of groups of neurons. This sequential firing of groups of neurons is the second layer of the software. The transmission of electrical impulses across the neuronal cell membranes and synapses is the third layer. The influx and efflux of sodium and potassium ions across the channels in the cell membrane is the fourth layer of software. All this happens in the hardware of the brain.

It is important to note that we 'are aware of' only the User Interface layer of this software. We are 'not aware of' the other three layers of the software or the hardware of the brain. This is similar to the case of the computer's software and hardware as described above.

Thus, to understand this entity called mind and its relationship with the brain well, we need to study it from these three perspectives.

Conclusion

Mind is a unique and specific entity that is not the same as brain. It is different from the brain but not separate from the brain. The Mental Disorders are disorders of the mind. To call them as disorders of the brain is imprecise. To understand this point, consider hemiplegia. It is a disorder of the brain, yet it is not a Mental Disorder (disorder of the mind). Hence it is not included in the DSM - 5.

Thus we can realize that although Mental Disorders happen in the brain, it is imprecise to term them as brain disorders. To give mind the status of 'organ of interest for Psychiatry', we should be able describe the mind the way every organ is described in medicine: anatomy, physiology, pathology, clinical examination, investigations, diagnosis and therapies. It can definitely be done - but not in the space constraints of an article.