

What is the mind all about?

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Here are questions to stimulate your thinking about how the mind works:

Can you decide to know something?

Can you decide to know anything (an arbitrary claim)?

When you're awake, you can decide not to evacuate your bladder, but when you're asleep, how does your mind prevent evacuation?

When you're awake, you can decide to walk, but when you're asleep, how can your mind cause sleep-walking?

Do you think that a trapeze artist could sleep-walk on a tightrope?

Why can you walk and converse at the same time but you can't calculate and converse at the same time?

Why can you walk and calculate at the same time but you can't sprint and calculate at the same time?

If the mind is immaterial, how does the brain create it, and what is it? If the mind is material, why does it seem immaterial?

Have you ever seen, heard, or touched another person's mind? If not, then why do you believe that they have a mind?

In this meetup, Philip Bitar will lead a discussion in the context of presenting his understanding of mind.

We'll discuss the following questions:

What is a mind?

What is a mind for?

What is consciousness?

What is consciousness for?

What is sleep?

What is sleep for?

What is emotion?

What is emotion for?

What are the basic components and activities of a mind?

How does decision-making work?

Why does mind seem mysterious?

Why is the mind-body problem a bogus problem?

Related topics (as per group interest):

Are computers conscious?

Could we create a conscious creature?

What is my personal identity?

Are we responsible for our decisions?

Commentary on initial questions

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Please note that this commentary is brief, not covering many relevant details.

Can you decide to know something? Can you decide to know anything (an arbitrary claim)?

The answer is *no*. We can try to learn something, but we can't decide to know something. For example, you know that you're reading this document, but you didn't decide to know that you're reading it. A person who says that they can decide to know something is insane. This reveals that cognition is involuntary.

Since we obviously have a volitional, conscious facility in our mind, we augment our model of the mind by adding an involuntary or automatic facility whose operations are unconscious. And in starting with the simplest model, we'll assume that the two facilities are discrete components of the mind, as shown in the figure in another handout.

Confidence rating

In the general case, knowledge isn't a matter of knowing vs. not knowing but is, instead, a matter of confidence rating as to the truth of a statement. For example, what is your confidence in the following statement? *Darwin's theory of natural selection explains the origin of the species*. In this general case, our confidence rating is involuntary, a result of involuntary cognitive processes. However, a confidence rating occurs on a continuous scale ranging from 0 to 100, and such a rating will have limited precision, say, rendering a value falling in the range 50-60. (Strictly speaking, a confidence rating will constitute a probability distribution, but, for simplicity, we'll ignore this.)

If we're in a situation where we must render a more specific answer than is given by our involuntary cognitive processes, then our volitional component can resolve the lack of cognitive precision as it wishes, but such arbitrary resolution does not constitute knowledge. Knowledge is not arbitrary, but is the result of the automatic component determining, to the best of its ability, what is true as it is guided by the volitional component, which selectively attends to sources of information and to ideas.

When you're awake, you can decide not to evacuate your bladder, but when you're asleep, how does your mind prevent evacuation?

The automatic component of the mind learns to prevent evacuation except when the volitional component approves of evacuation. Although the volitional component can go to sleep, the automatic component is always awake. If the need for bladder evacuation reaches sufficient urgency during sleep, the automatic component will awaken the volitional component.

Discrete vs. continuous model of consciousness vs. unconsciousness

The discrete model of an automatic unconscious component vs. a volitional conscious component is the simplest way to explain the fact that many cognitive processes are strictly unconscious.

To illustrate, as covered in the meeting, automatic perceptual processes use neural impulses from the retina to create our conscious experience of stable three-dimensional objects that have a potentially continuous range of colors. I used an analogy: in presenting information to the volitional component, the perceptual operations of the automatic component are similar to the activity of a telegraph operator translating Morse code into English. In addition, the basic processes of information storage and retrieval are unconscious.

Furthermore, the automatic component must always stay awake in order to prevent bladder evacuation during sleep, as well as to perform operations such as the following during sleep: keeping our heart beating, keeping our lungs breathing, keeping our body moving as needed to prevent bed sores, and monitoring auditory inputs for signs of danger. We can close our eyes, but we can't close our ears, thereby ensuring that our automatic component is never deprived of auditory input, even when our volitional component is asleep.

Finally, the cortex is a discrete component of the brain, and the cortex generates our conscious experience, so the simplest model is to identify the cortex as the volitional component and the subcortical elements together as the automatic component.

Keep in mind that the modeling process starts with the simplest model and adds complexity only as needed in order to explain the data of interest. Each component of the four-component model shown in the figure has subordinate components which we're not identifying here.

When you're awake, you can decide to walk, but when you're asleep, how can your mind cause sleep-walking?

Basic walking becomes an automatic process early in life, and sleep-walking consists of automatic walking without the command and supervision of the volitional component. But just as the automatic component learns not to allow bladder evacuation without the approval of the volitional component, so the automatic component learns not to engage in walking without the approval of the volitional component. Such learning is usually completed in early childhood.

Do you think that a trapeze artist could sleep-walk on a tightrope?

The automatic component is adequate for performing a learned motor skill under highly predictable conditions. The volitional component is needed as the conditions become less predictable. I think that walking on a tightrope will entail sufficiently unpredictable conditions as to require supervision by the volitional component.

Why can you walk and converse at the same time but you can't calculate and converse at the same time?

The automatic component does the walking, while the volitional component does the conversing and the calculating. However, whereas the automatic component is always engaged in many things at the same time, the volitional component can do one only thing at a time, namely, whatever is the focus of our attention. But the volitional component can switch among simultaneous activities on an ongoing basis in order to supervise more than one ongoing activity, and the more predictable the respective activities are, the more successful this switching strategy will be. Thus, if we're engaged in a highly predictable conversation that proceeds slowly, we could switch back and forth between the conversation and a relatively simple calculation.

Why can you walk and calculate at the same time but you can't sprint and calculate at the same time?

As a variation on the prior answer, extreme exertion of effort requires the volitional component. I illustrated this using Roger Bannister, who broke the 4-minute mile in 1954. Bannister said that he could exert himself to the ultimate extreme — for which he was known — only once or twice a year.

If the mind is immaterial, how does the brain create it, and what is it? If the mind is material, why does it seem immaterial?

Of logical necessity, a person can't observe the mental activity of another person. To illustrate, we can't feel the pain of another person. If we feel pain, it is necessarily our pain, not someone else's. Hence, of logical necessity, mental activity is private to the respective person. It follows that the reason that the mind seems immaterial is that we can't perceive a mind with our five senses. Hence, in the simplest model, a mind is actually material, created by cerebral activity. A conscious experience is the private view

of the respective cortical activity. (For a more complete explanation, please see handout "What is knowledge?")

Have you ever seen, heard, or touched another person's mind? If not, then why do you believe that they have a mind?

Knowledge is given by the simplest, most accurate model for predicting observations in all forms of human experience. (Please see handout "What is knowledge?")

Since one person can't observe the mental activity of another, the assumption that another person has mental activity does not improve the predictive accuracy of our model. Instead, the assumption that another person has mental activity is made when it simplifies our model. Our model of humans is simplified by assuming that, since all humans have the same basic physiology and behavior, other humans have mental activity just we do.