

# What is the Mind-Body Problem?: Marvin Minsky

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## Transcript - Long

### Robert Lawrence Kuhn:

I've been obsessed with the so-called mind-body problem my entire life. This is a problem that goes back hundreds of years and basically says what are we? What are human beings? We know we have a body or a brain and we know we have a mind, and so how do we articulate the two together? Philosophers, theologians, scientists, everybody has an opinion how we should begin to think about this problem. I come to you, Marvin, as a computer scientist and as an expert in artificial intelligence to give us perhaps a different way of thinking about the mind-body problem.

### Marvin Minsky:

Well, people might ask what is a mind, because we know that we have a brain and it thinks and this produces mental activities, but there seems to be some disconnect between mental activities and physical things, and I think people are too ready to say that's an unbridgeable gulf. The way science has usually progressed is that we find intermediate ideas, and then you don't have two separate worlds. For example, at one time people said sulfur has a funny smell, and that's a property of sulfur. This was an idea for thousands of years, that substances had odors. Then Lavoisier and Priestley come along and they get the idea that there are elements and compounds, there is a lot of chemistry but it was very flaky because they didn't know about elements and molecules and didn't have theories that were quite right. And so Lavoisier discovers sulfur doesn't have a smell, but there's a gas which is in sulfur and it's maybe sulfur dioxide. It's combined with the oxygen in the air, because these were the people who discovered oxygen as a separate element, and that's what has the smell. That's a big difference. How could a thing have a smell? Is there some – what people discovered is that very small particles, too small for any instrument in those days to measure, the human nose can recognize – that even I can recognize six photons of light. No instrument could measure that until recently. The human nose can represent two or three molecules of a compound. There was no instrument that could detect those. So all of a sudden, the smell which was in the mental world and the sulfur which is in the physical world was an unbridgeable gap, it was a property – a mental property of the substance, but now we know, oh, it's nothing special. These little pieces of sulfur come off, the oxygen combines with the air wafts in there, it excites a receptor and that goes to the brain and somehow, we don't know, it associates the memory of if it were hydrogen sulfide it would be rotten eggs, if it's sulfur dioxide, I don't know what it's called. So I think the mind is the same thing. I think of the brain as having many levels of processes. Suppose you have an automobile engine running. Is the running physical? Of course not. Is it mysterious? Of course not. The running is because when a piston goes down it drives the crankshaft and when it comes up it sucks in some more gas and air and there's a little gadget to make, a sparkplug or whatever unless you have a diesel, and so there's a cycle. The running of the engine is a sort of process like a little computer program, only it's nowhere. It's just in the workings of the machine. It's an abstraction. So the running of the engine is not physical, but it's not in a mysterious world, it's just a chain of cause and effect. And so to me the idea of dualism, that there's a physical world and a mental world is just ignorance because for thousands of years nobody could find the 30 little steps between brain cells and making long-range plans or falling in love. But now I can imagine that these brain cells form this particular way of memorizing one bit on or off or five bits and this goes to something else which causes a little reasoning process and this makes records in the representation and you can remember what happened and so on. And so there's no mind-body problem. The problem is how do you connect these seven different models of mind at higher and lower levels? So to me, all those philosophers are too lazy to realize that there's a lot of worlds and they're not separate. They are just different ways of looking at the same thing.

### Robert Lawrence Kuhn:

And these worlds are different aspects of the mind, different modules?

### Marvin Minsky:

They're different ways of describing what happens in this physical machine. They are not worlds at all. They're just ways of thinking about it.

### Robert Lawrence Kuhn:

And therefore they are not reducible in a sense. You can't explain it in terms of neurons, but they are certainly not something that you need some immaterial substance to create.

### Marvin Minsky:

I think they are reducible, but it's very complicated. It takes thousands of steps. So what? It's a lot of work. A lot of philosophers say, if it takes more than three steps it must be irreducible. Nothing is irreducible. It's just that we're not smart enough to reduce it.

### Robert Lawrence Kuhn:

And so ultimately you believe the mind-body problem is really a question of doing more and more sophisticated, harder and harder science, to go from these modules of thinking, these 30 or 50 or however many we have, and describing them in terms of finer and finer brain function?

### Marvin Minsky:

Right. To say that there's a mind problem is to say I don't believe I can see the connection between these and I think I'm so smart that nobody else can either.

### Robert Lawrence Kuhn:

Ever?

### Marvin Minsky:

Ever. And that to me is – to say something is impossible is the height of arrogance and presumptuousness.

### Robert Lawrence Kuhn:

The argument is these things are so different, the experiences of a mind and the outputs of a brain, little chemicals floating across synapses between neurons, electrical – very low electrical sparks being – trillions of synapses.

**Marvin Minsky:**

Yes.

**Robert Lawrence Kuhn:**

All that is so different from the experience of living and seeing and experiencing the world that you can never totally express one in terms of the other.

**Marvin Minsky:**

Well, that's people think of experience as simple and immediate and direct. Here's my hand, and you can see it, and now fistness has appeared. Is that inexplicable? Or is that you don't understand enough about your many layers of visual perception and model building and representing, and this is represented as represented as fistful and this is palmful. There is no mystery at all. But nobody yet knows all the neurological steps that go between these two perceptions. So I think philosophers who talk about dualism – there's two kinds of philosophers. There are the kinds of philosophers who study the questions that science can't answer yet and make suggestions, and these are wonderful. People like Hume and Kant actually made little theories that led to other things. Kant almost got Freudian theories of the unconscious except that he faked out. He said, you know when you're about to do something wrong there's a little voice in your head that says that's not right, and then Kant concludes that the voice of God, whereas Freud said that's your superego. But there is a constructive scientist making new theories of memory. But other philosophers look back to the past and say, here is the history of philosophy and here's why this old rotten theory is really good. So I don't see the mind-body problem as anything but laziness. This is too hard or I can't solve it and therefore no one else can. But if you look at it as moving 50 steps, why aren't there 50 things between the world and the mind? Then you can close the gap and maybe it will all go away.