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SPEAKERS

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John materialism is an ancient philosophy. It dates back to the ancient Greeks, and the viewpoint of Democritus, who is a Greek philosopher, is that the only thing that exists is atoms in the void, and that everything, including the human mind, is reducible to atoms in the void. And in the 20th century, the materialist ideas have been extended a bit. The behaviorists in the early 20th century believed that the mind was at best, irrelevant and possibly didn't even really exist at all. The only thing that actually mattered was the behavior of a human being or the behavior of an organism. That philosophical viewpoint turned out to be untenable, so the viewpoint that the mind was identical to the brain became widely accepted among materialists in the 1960s and 70s. It was called identity theory, and that viewpoint has come to be untenable. Pretty obviously, the mind is not the same thing as the brain. And other theories such as functionalism, which views the mind. Brain relationship, somewhat akin to the relationship between the software and the hardware of a computer, has become quite popular, but the mind is not computation. In fact, the mind is the opposite of computation. Although the brain itself could be described as a computer, the mind is no form of computation, and a theory that is currently very popular among materialists is called eliminative materialism. And eliminative materialism is the viewpoint that there is no such thing as the mind. It's not that the mind is explainable by matter. It's just that the mind doesn't exist at all, and the only thing that exists is matter, and that we are deluded into thinking we have minds that's a rather radical, strange way to look at things, but it actually is rather popular nowadays amongst materialists. None of these philosophical materialist viewpoints have any particular support in science. The scientific evidence strongly suggests that these viewpoints are wrong. There are a variety of classic studies in neuroscience that support the viewpoint that some aspects of the mind are not material, and that refute materialism. The first set of experiments are experiments that show cerebral localization with certain kinds of neurological functions, but not with others. It's been known since the 19th century that for motor and sensory function, there are very specific locations in the brain that seem to mediate those functions. What if I move my hand that is controlled by a specific part of my opposite cerebral hemisphere, and the area is quite discrete. Vision is controlled by a very discrete area in the occipital lobes. However, higher intellectual functions, abstract thought, such as mathematics, such as contemplating, ethics, things involved in personality, are not localized like that. That is that there is no calculus, center of my

brain. There's no addition center of my brain. The brain seems to be necessary ordinarily, for doing calculus and doing addition and thinking about concepts like justice and mercy and so on. But it's not localizable in any way near the same way that movement and sense and sensation is localizable. The belief that higher abstract thought was going to be localizable was held by materialists in the 19th century, and they developed the theory of phrenology from that as the idea that all of these individual higher intellectual functions had a spot in the brain that controlled them. And phrenology, of course, has been discredited. It's been shown to be wrong, and it was wrong because only certain things in the brain seem to be mediated by the brain. Other aspects of the mind don't have a spot in the brain that seems to give rise to them. The implication there is that they're not really material, that they're an immaterial power of being able to reason and use logic. And frankly, that's a very old dualist idea. It was an idea proposed by Aristotle, an idea as part of Thomistic philosophy. So for 1000s of years, dualists have predicted that, and modern neuroscience confirms that, back in the 1960s Roger Sperry, who is a prominent neuroscientist, did a series of studies on patients who had had split brain operations, and these were patients who had severe epilepsy in which an epileptic focus would begin in one hemisphere of the brain and traveled through the corpus callosum, which is a bundle of fibers connecting the two hemispheres and cause a generalized seizure. It was recognized by surgeons in the mid 20th century that if you cut the fiber bundle that connected the two hemispheres of the brain, that you could prevent the seizures from becoming generalized, and you could greatly improve the quality of the patient's life. So a number of patients had this operation called corpus callosotomy. It's an operation that I've performed, and that many neurosurgeons have performed, and surprisingly, after the operation, the patients their seizures would get better, of course, but they really weren't much different. That is that their brains were essentially cut in half, but they still seem to be a unitary person. They still seem to be fairly normal. Sperry was a neuroscientist who studied these people in detail, and he did find that there were some subtle abnormalities as a result of cutting the brain in half, but the abnormalities were very subtle. They were so subtle that the experiments he did won him the Nobel Prize. But they weren't obvious. They weren't obvious changes, and what that implies is that the the human mind is not purely generated by the matter of the brain. Otherwise, cutting the brain in half would have profound effects on the human mind. It might make two people certainly, it would create a rather profound difference in a person's state of consciousness, and it doesn't. You can cut the brain in half, and the person can't tell the difference, except that he has fewer seizures. There are some subtle differences, but the differences can only be detected with literally Nobel Prize winning research that shows little differences in perception. There are the experiments of Wilder Penfield, who was the pioneer in epilepsy neurosurgery from the 1930s to the 1960s Dr Penfield, who worked in Montreal in Canada, was the first neurosurgeon to systematically operate on the human brain when people were awake. The brain doesn't feel pain. The scalp can feel pain and the skull can but he would give local anesthesia so the patients didn't have pain, and he would work on the brain while they were awake in an effort to identify the focus of their seizures and to remove the focus from the brain so their seizures would stop. And he operated on upwards of 1000 patients like this, and very carefully recorded his results. He was a meticulous scientist as well as a neurosurgeon, and he began his career as a materialist. He believed that all the mind originated from activity of the brain. But by the end of his career, he was a passionate dualist and was a harsh critic of materialism. And he was a dualist for several reasons. First is that he repeatedly observed that there were aspects of the patient's mind that no matter what he did to the brain, he couldn't affect he could elicit memories by stimulating a part of the brain. He could make a muscle move or make a patient have a sensation, but he couldn't change their consciousness. He couldn't change their intellect. He couldn't change their sense of self. There was a fundamental core the person's soul, that no matter what he did to the brain, remained the same. So he said there was something he couldn't reach using material things. The other

observation that he had, which I think is absolutely fascinating is that he asked the question, why are there no intellectual seizures? And when people have epilepsy, the epilepsy can follow various patterns. Commonly, a person will have jerking of a muscle. Sometimes so many muscles jerk that they actually go unconscious. Sometimes they have a tingling on their skin, or sometimes they'll have a funny smell, or sometimes they can even have a little behavioral tic. But they never start doing calculus. They never contemplate justice or mercy. They never think about Shakespeare. So Penfield says, Why aren't there intellectual seizures, if the mind comes from the brain entirely, the mind is material in some sense. Well, then you ought to have seizures that make you do addition when you can't stop. You ought to have seizures that make you think about politics and you can't stop, but you don't. Says there are no intellectual seizures. And he says, what that implies is that the. Intellect is not the brain, because otherwise you would have, you would have intellectual seizures. So Penfield was a very profound thinker on this matter. He was the pioneer in the study of the brain, and he conclusively showed, in my view, that there is an immaterial aspect to the mind, particularly the intellect, particularly the ability to reason, to use logic. And he started out as a materialist, and he finished his career as a passionate dualist. In 2006 a neuroscientist named Owen published a landmark study in the journal Science, looking at brain function in people who were in persistent vegetative state. Persistent vegetative state is a condition where a person has such severe brain damage that they show no sign of consciousness at all. It's basically a persistent, deep coma, and it can go on for years. And many times, people who are diagnosed as being in persistent vegetative state, for example, from a car accident or from lack of oxygen to the brain, something like that. Many times their family and sometimes their caretakers will say, but I get the sense that the person is there, that they understand things, but there's no clinical evidence for it. You examine them, there's no sign of any reaction at all, and on scan, their brains are shrunken and obviously severely damaged. So Owen did a fascinating experiment. He used a technique called functional MRI imaging, which is an MRI machine that images changes in blood flow in the brain that seems to correlate with brain function. So if you're moving your arm, the part of your brain that involves moving your arm lights up on the functional MRI if you're thinking about stuff, your frontal lobes light up things like that. So what Owen did is that he took a woman who had been diagnosed for several years in persistent vegetative state from a car accident, who showed no sign at all of any awareness deep colon. Put her in the MRI machine and asked her questions through a little microphone and head and headset. He said, pretend that you're playing tennis or imagine that you're walking across the room. He asked her to imagine all these things, and her brain kind of lit up in places. But you could say that, well, the brain lighting up doesn't mean she was understanding anything. It just meant maybe the sound coming into her ears was causing a reflex or something. So what he did was he took 15 normal people, and he did the same thing with that, stuck him in the machine and asked the same questions. And then he asked neuroradiologists to look at the functional MRI images of this woman and the 15 normal people and see if you could tell a difference between the two. And they couldn't. Her pattern of reaction was identical to the normal people. That seemed to imply that she could understand what he was asking, even though, medically, she was diagnosed as having no mind at all, and he just and he did something that was very clever, that absolutely fascinates me, and he said, maybe the lighting up of areas in her brain and the lighting up of the areas of normal people's brains was not because of understanding was but was just because of the reception of the sound, and that it didn't really mean she understood. So what he then did is he took the same words that he had asked her before, and he asked them again, but he mixed them, but he mixed the sequence of the words so they didn't make any sense walking understand pretend room across. So he took away the semantics and just left some syntax, and her brain stopped, stopped reacting, as did the normal controls. Her brain only reacted when what he said to her made sense. It didn't react from just sound. So Owen's work was a landmark study, and it made people begin to question these folks who were in persistent

vegetative state, are they really unaware? And so his study has been repeated by a number of different investigators, and they're probably last I looked, there were 40 or 50 patients who had been studied by other investigators, and at least half of them show the same thing that he found, that even when your brain is so massively destroyed that there's no clinical evidence for any mental activity at all, functional MRI can find that these patients are capable of thinking in quite quite clear ways. And there are some patients who can do mathematics. That is that what, what some researchers have done is they will ask a person in persistent vegetative state to do simple math, what's eight plus six, and then give them different answers. And when you, when you, when you hit the right answer of the brain lights up. So very clearly, there are aspects of the. Mind that cannot be destroyed by severe brain damage. That's what Owen's work is showing us. It's showing us there are aspects of the mind that aren't connected tightly to the brain, that are immaterial. Some of the most fascinating work in neuroscience has been the work of Benjamin leibot, who was a neuroscientist in California back in the mid 20th century. Leibot was fascinated by the correlation in time between thought and brain activity, and he did a whole series of experiments in which he would place electrodes on the scalp of patients or people, and he would ask them to make decisions or think about things, and he would attempt to time the moment when they made a decision, when they thought about something, and correlate the moment they thought about something with the moment that there was a change in the brainwave activity. And he did a number of different experiments. One experiment has become very famous and ironically, has been used by materialists to support materialism, although an understanding of what leibot actually found is quite the opposite, it refutes materialism. The experiment that leibot did was he would ask a person to press a button when they decided to do so. So he put a button in front of them, and he would have a clock with a sweep hand, and the person would just sit there, and whenever they would decide, I think I'll press the button and push the button, he asked them when they made the decision to press the button, not when I pushed it, but when they decided to push it. Just note the fraction of a second that was on the clock at the same time he was recording brainwaves, and he wanted to find out the moment you decide what happens in your brain. And what he found was quite consistently, was that about perhaps half a second before you decide to do something, there's a spike in your brain, spike in your brain wave that he called the readiness potential, and it was before you were aware of the decision to do anything. It's almost like an unconscious motive, and then you would decide a half second later and do it. So he found this quite consistently, that there would be the spike in brain activity, then the conscious awareness of a decision, and then you go ahead and do what you decided. Materialists have used this to suggest that we are misled by thinking that we have free will, that what actually happens is that our material brain just sort of makes the decision, and then we kind of think that we decided, but we didn't. It was our neurotransmitters and neurochemicals, but leibit didn't agree with that. Leibot pointed out that he asked the subjects to do something more. He said, When you decide to do something, then decide not to. So you decide, I'm going to push the button up, no, I'm not going to push the button. When they did that, he found that there was a readiness potential for deciding to push the button, but there wasn't a readiness potential to decide not to push it. And he said he didn't prove the existence of free will, but he proved the existence of free won't. That's what he called it free, won't. He said what he sees going on in the brain with his experiments is that we are bombarded with what are probably pre conscious or unconscious motives, and that we are freely capable of deciding whether to comply with them or not, and the decision to comply with them is not material. There's no sign of any brain activity when you decide not to comply. And he pointed out, kind of interestingly, that free won't is a parallel concept to traditional religious ideas of original sin, that in a sense, we have motives that are beyond our control. We can't stop the motives, but we can stop ourselves from doing it. And the free will or the free won't, is scientifically demonstrable, and he demonstrated and his experiments were brilliant, and he was a dualist. He was a property dualist, and he

rejected the idea that his experiments proved materialism. He felt just the opposite, that it proved that free will was real. I what this remarkable research suggests is that the materialistic bias that has been present in neuroscience, specifically and in science in general, leads us to misunderstood. Understand the results of our science, one could say, in a sense, almost, that we have an ocean of data, an ocean of answers, but we've forgotten what the questions are. We've forgotten the questions that we're supposed to be answering. And when you look at these studies in cognitive neuroscience carefully, they are giving us a very clear answer to a fundamental question in neuroscience, and that is, is the mind entirely a product of the material brain? And the answer they're giving us is that it's not. And this particular viewpoint that neuroscience has been misled by materialistic ideology has been addressed in some depth by by two people working in the field who I think have done fascinating work. There's a neuroscientist named Bennett from Australia, and a philosopher named Hackett from Oxford, who've published several books over the past couple decades, the most prominent of which is, I believe it's a philosophical basis of neuroscience in which they critique the materialist viewpoint in which they point out that the traditional, classic way that materialist science scientists do neuroscience seriously misrepresents what the science is Telling us and that we can't understand our experiments if we begin with a materialistic bias that isn't justified by the evidence. So I strongly recommend Bennett and Hacker's work. It provides a wonderful philosophical foundation for getting a deeper insight into neuroscience. The object that neuroscience studies, the human mind and the brain, is best understood by dualism. And I believe that neuroscientists need to become more acquainted with with dualism and need to understand the limitations of materialism, which are profound and which are holding their science back the natural world can be much better understood if you assume that it has purposes, if you assume that it has design, it helps you to understand how things work. And I believe that the human mind properly understood will give us a much deeper understanding. Of nature, and not just of the mind. In the 19th century, a German philosopher named Franz Brentano asked a very important question, and I think answered it very well. He asked the question, what is it that is unique about the mind that makes it different from matter? We tend to think of mind and matter as different things, but what is the is there one thing that makes something mental as opposed to physical? And he said, actually there is. And he said, It's intentionality. And intentionality is a, is an, is an ancient term. It was a term that dates back to Aristotle and was used by Scholastic philosophers. And what intentionality means is that it is the ability for something to be about something else. For example, if I'm thinking now about Washington, DC, my thought is intentional in a sense that I am thinking about something that's not me. I'm thinking about a city, or I'm thinking about a doorway or thinking about my wife. So the ability for a thought to be about something is unique to the mind, because no physical object is about anything in the absence of a mind, a rock sitting on a beach isn't about anything. A tree isn't about anything. Only a thought can be about something. So Brentano said that if we are to understand the mind, we have to understand intentionality. We have to understand how a thought can be about something. And of course, you can't explain intentionality using materialistic precepts, because matter is never about anything intrinsically. And materialists have tried in the 20th century. They've taken up Brentano's challenge. There have been many different efforts, for example, by Daniel Dennett, who is a materialist philosopher, to explain intentionality as some kind of material thing, but it can't be explained that way. What's remarkable about intentionality, and what the Scholastic philosophers understood, is that intentionality is in some sense, a reflection of a grander aboutness in nature, and that grander about. This is called teleology. And teleology is the tendency for processes in nature to go somewhere, to become something. For example, the classic example is an acorn growing into an oak tree. Teleologically, it seems to be what the acorn is designed to do, to become an oak tree. The Acorn doesn't become a an ocean or a Corvette or or a flower. It becomes an oak tree. It has a very specific direction and a goal, and it's a kind of

aboutness in things that they're all directed. And the Scholastic philosophers realize that intentionality in the human mind is kind of a reflection of this aboutness in all of nature, and essentially it's a reflection of purpose in nature, and that you can't understand the mind, or you can't understand nature unless you understand purpose. And in fact, biologists have tried because they are allergic. If they're Darwinist biologists, they're allergic to teleology. They're allergic to the notion of purpose. They've tried to explain biology without explaining without invoking purpose, and they can't do it. You can't explain a living thing without explaining what the purpose of the parts of that living thing are. You can't explain the heart unless you explain that the purpose is to pump blood. You can't explain the eye unless you understand the purpose is to see. Where do those purposes come from? Well, those purposes are kind of like intentionality. They're kind of like a mind. And the implication is that behind the universe there's a there's a mind, a grand mind, a mind that is reflected in the way the universe works. And as St Thomas would say, that is what all men call God. So what really helped me in my personal understanding and in my faith is that I see that everything in nature that shows purpose, that shows goal, directedness, that shows teleology and intentionality, is a reflection of a much higher mind. It's a reflection of God. Materialism, in my viewpoint, is not even really a philosophical perspective. It's just a mistake. It's like saying it's like claiming that two plus two is five is mathematics. It's not really mathematics. It's just an error. And materialism isn't even sufficiently coherent, in my view, to qualify as a philosophical perspective. The best philosophy on this originated with the ancient Greeks, particularly with Aristotle. And what Aristotle proposed and what really became mainstream metaphysics for such philosophers as St Thomas Aquinas and the Scholastic philosophers, is that things that exist in the world are composites of form and matter, and that form is the intelligible aspect of things, and that matter is what makes something an individual thing, and not just sort of a theoretical thing, but that the actuality, the intelligibility of something is in the form. It's not in the matter. Form is what makes things real. And what I believe materialism does in modern science is it denies that the form of things is the most important aspect of them that we need to for example, in biology, we need to focus on the purposes of biological structures, not just on the details of the structure itself. We need to know why they're doing what they're doing. And once you start looking for purposes, you start looking at immaterial aspects of nature and form, and that leads you out of materialism. The reality is that if you are a consistent materialist, you can't even do good science. Let's face it, if you think the only thing that exists is matter extended in space, then why would you pay any attention to physical laws is Newton's law, matter extended in space. Was Einstein's theory, Einstein's equations of gravitation? Are they matter extended in space? No, the best science is science that looks for deep conceptual principles that underlie the natural world, and that's inherently not a materialistic perspective. I.