Philosophy Study, March 2017, Vol. 7, No. 3, 111-124
doi: 10.17265/2159-5313/2017.03.001

The Alleged Hard Problem: A Pseudo Problem

Michael Prost
Fern Universität in Hagen

One of the most intriguing problems of philosophy is the question whether the human mind and human consciousness can be completely reduced to matter, namely to the brain. A special problem in this context is what has been called the "hard problem." The hard problem denies that it is possible to reduce phenomenal experiences to brain states. The hard problem claims that it is impossible for materialists to explain what it is like to feel something. Here, we will prove that the hard problem is a pseudo problem that is based on errors in logic and language. One of the key arguments for the hard problem, the conceivability of zombies, is logically wrong within naturalism, which most philosophers acknowledge. Nevertheless, generally all questions of the type "What is it like to feel something?" are either trivial or linguistically impermissible. The core of the "hard problem" is the mix-up between non-reducibility and non-describability.

Keywords: human consciousness, human mind, naturalism, zombie argument, hard problem, explanatory gap, property dualism, logic, language

1. The Alleged "Hard Problem"

One of the most puzzling questions of humankind is the question about the special character of the human mind and human consciousness. This is the mind-body problem of philosophy. Just recently, the author has solved the mind-body problem (Prost 2016; 2017). The solution is based on naturalism. Naturalism assumes that everything can be explained by natural sciences in its current status of knowledge.[1] The solution of the mind-body problem is that "the human mind is the language-representing neural network." A related problem to the mind-body problem is the question of what human consciousness is. The author has also answered that question. Actually, that is insofar more difficult because there is no unambiguous definition of consciousness. Neuroscientists and philosophers use different definitions of consciousness.[2] Common sense tells us that it is not possible to answer a question of the type "What is object A?" if there is not an unambiguous definition for object A! That is a consequence of logic. The author has given the necessary definition: "Consciousness is the ability of any brain to act based on a complex set of internal and/or external sensations after processing these sensations in complex, potentially lengthy processes." This definition is in agreement with the understanding of neuroscience and also with the conventional use of "consciousness" in ordinary language. The definition should eventually be acceptable for philosophy as well. Moreover, the definition also shows that consciousness is not unique to humans. All animals with a brain possess consciousness. Based on this definition, the question of what human consciousness is can be answered, too. "Human consciousness is the ability of humans to include verbal thinking in conscious processing."[3]

Michael Prost, Dr., Institute of Philosophy, Fern Universität in Hagen, Germany; main research field: Philosophy of Mind, Philosophy of Physics, and Neuroscience of Consciousness.

Still, not everybody seems to be convinced that the explanations given by the author solve the hard problem. The hard problem originates from Thomas Nagel's famous paper "What Is It Like to Be a Bat?" (Nagel 1974). Frank Jackson addressed basically the same problem in his paper "What Mary Didn't Know" (Jackson 1986). The general issue was named the "explanatory gap" by Joseph Levine (Levine 1983) before David Chalmers eventually called it the "hard problem" (Chalmers 1995; 1997a; 1997b; 2006). All these authors claim that consciousness can in general never be explained by materialism. But as indicated before, these philosophers use the term "consciousness" with a different meaning than in neuroscience or in ordinary language. What these philosophers mean by the term "consciousness" is also called "qualia" in philosophy and is what neuroscientists or ordinary people would call "phenomenal experiences." So the hard problem can be better specified. It claims that it is not possible to explain phenomenal experiences materialistically. A general indication for these types of experiences is the question "What is it like to feel something?" Nagel argues in his paper that no scientific knowledge will ever give us any insight into the feelings of a bat. We can never know how a bat feels. Jackson uses the same argument with a different example. The scientist Mary knows every scientific fact about seeing colors but has never experienced anything else but seeing black or white herself. Thus her knowledge doesn't help her to know how it feels to see colors. The general question addresses two different perspectives, the third-person perspective, and the first-person perspective. The third-person perspective is considered to contain all possible physical information about a situation. Mary knows everything about the physics of light and everything about human perception of light and colors. But this third-person knowledge does not help her to feel the first-person perception of seeing colors. While Levine sees the problem more as an epistemic issue, Chalmers insists that the problem is ontological. Therefore, the epistemic explanatory gap turns into the ontological hard problem for Chalmers. In his argumentation against materialistic views, Chalmers uses the zombie argument. Zombies are considered to be creatures which have all the same physical configurations as humans but lack phenomenal experiences (consciousness). Chalmers argues that zombies are conceivable therefore they must also be possible. But if zombies with all the physical configurations of human except phenomenal experiences (consciousness) are possible, these phenomenal experiences (consciousness) cannot be physical. Therefore, it is impossible to reduce phenomenal experiences (consciousness) to physics. That means that materialism is not true. Chalmers does not go so far as to propose a different substance to explain phenomenal experiences (consciousness). Thus, he avoids substance dualism. He sees himself as a property dualist.[4]

Now we have to come back to the linguistic issue about the term "consciousness," we mentioned above. As shown, neuroscientist and ordinary people would use the term "consciousness" with our definition, namely that consciousness is a state of the brain which is connected to wakefulness and initiates actions. The philosophical use merely describes a part of consciousness, namely phenomenal experiences or qualia. In order to avoid any confusion, we will use the term "consciousness" with the understanding of neuroscience and will use the term "phenomenal experiences" when we talk about the philosophical meaning. Even though we have mentioned only four prominent philosophers, the resistance against materialism and reductionism is widespread within the philosophical community. There seems to be the dogma of the specialty of the human mind, which has to be defended against any attempts by the natural sciences to explain the human mind and human consciousness. But as mentioned above, the author has delivered a materialistic explanation of the human mind and human consciousness by reducing everything to neural activities and neural configurations of the brain.

Here, we will add to the argumentation by showing that some of the arguments against materialism are just based on a lack of understanding of natural sciences, which then leads to some logical errors. The other class of

arguments is just an insufficient and inconsistent use of language. Eventually, the hard problem will completely dissipate. First, we will examine what naturalism really means. We will show that alternate understandings of naturalism do not make any sense at all. Then, we will show that one of the key arguments for the hard problem, the conceivability of zombies, is completely erroneous within naturalism and shows a lack of understanding of physics. Eventually, we will prove that the general questions behind the hard problem, which are of the type "What is it like to feel something?" are either trivial or nonsensical due to errors in the use of logic and language.

2. Naturalism

First, we must clarify what the philosophical view of naturalism means. Naturalism means that everything that exists was created in a natural way and can be explained by natural sciences. The intention of naturalism is to exclude every non-natural entity from all explanations. This view is especially directed against any religious views. A naturalist would claim that the universe was created in the big bang and the big bang was not caused by God. A naturalist would claim that the universe evolved from the big bang following general laws of nature. A naturalist would claim that part of this evolution was the development of our sun, earth, life on earth, and eventually humans. A naturalist would claim that God did not play a part in the evolution of humans and did not give humans a non-material entity such as the soul. Actually, it should be mentioned that naturalism is a minority view. Probably 80% of the world's population believes in the existence of a non-material soul. It has to be emphasized that the account of the Abrahamic religions is not in complete contradiction to naturalism and is difficult to disprove by science. More so, the account of the Abrahamic religions incorporates the biggest parts of naturalism. The only difference to "pure naturalism" is that it is assumed that God indeed caused the big bang. Actually, this would solve a huge problem intrinsic to pure naturalism. It is known that there exist 18 natural constants, which are extremely fine-tuned. This means that they show just the necessary values that were needed so that our universe could develop to the universe we experience today. If just one of these 18 natural constants were a little bit off our universe could not exist in its current form and humans would not exist either. Naturalism concedes that this fine-tuning could not have happened by accident, the probability therefore is too small. The only possible explanation physics has so far is the so-called inflation hypothesis. The inflation hypothesis assumes that our universe is part of a multiverse, in which permanently an almost infinite number of new universes are created. The huge number then makes it possible that one universe, namely ours, has the fine-tuning by accident. Right now there is no reason to claim that the inflation hypothesis is more probable than the claim of the Abrahamic religions that God created the universe via the big bang and that God adjusted all the parameters in a way that led to our universe including humans. In the author's opinion, it is possible to be a naturalist but leave the question open whether the big bang was caused by God or has unknown physical causes. One could call the first view "religious naturalism," the second one "pure naturalism." In both cases, naturalism would claim that everything that happened after the big bang could be explained by natural sciences, including the development of the human mind and human consciousness.

It is interesting that most naturalists among philosophers are not aware that the commitment to naturalism automatically makes them physicalists, materialists, and reductionists as well. When the assumption of naturalism is that the universe was created in the big bang, physics is the science to describe this event. Indeed physics knows a lot of details about the big bang. Physical models of the big bang allow physicists to make numerous predictions about the current status of the universe. And indeed, many of these predictions can really

be observed, proving the general correctness of the model. But on the other hand, physics is far from being complete. About 30 years ago, it was discovered that besides ordinary matter—that is the substance humans and everything what we experience is made of—there are two more forms of matter, namely dark matter and dark energy.[5] Even worse, it was discovered that ordinary matter makes up only 5% of all matter in the universe; 95% is dark matter and dark energy. But even with ordinary matter, physics has open questions. There are two great theories, which apply to ordinary matter, namely quantum theory and the general theory of relativity. Both theories yield excellent results. But these two theories are mutually contradictive so at least one theory must be wrong, maybe both. Quantum theory is used to describe the constituting elements of ordinary matter, namely atoms and elementary particles. The formalism achieves this with great precision but it remains unclear what the formalism means. In conclusion, one can say that physicists know only something about the smallest part of the universe, namely ordinary matter, but physicists don't really know what this ordinary matter is. Anyway, the lack of knowledge about the real character of matter does not prevent us from gaining a lot of knowledge about the principles that are relevant for our normal environment, the world of our sensual experience. That having been said, it has to be emphasized that indeed physics is the basis of all natural sciences and therefore physics is the fundament of naturalism. Consequently, naturalism incorporates physicalism and every naturalist must automatically be a physicalist as well.

As indicated before, physics claims that the universe was created in the big bang. Physics also claims that in the big bang only one kind of substance was created, namely matter. As we just have shown, so far three different kinds of matter are known: dark matter, dark energy, and ordinary matter. It is absolutely possible that still more kinds of matter might be discovered in the future. Nevertheless, the claim of physics is that only one substance was created in the big bang and that all kinds of this substance obey the laws of physics. Even though we don't know what dark matter and dark energy are, we know that they have effects on the universe and on ordinary matter. That is the reason why they were discovered. But these effects are negligible in the world of our direct experience. Dark matter only has an effect on the scale of galaxies and dark energy only has an effect on the scale of the entire universe. On the other hand, this means that neither dark matter nor dark energy can have any effect on anything on earth. The fact that there are no effects in the world of our experience is precisely the reason why dark matter and dark energy were not discovered earlier. That is also the reason that neither dark matter nor dark energy can play any role in the explanation of the human mind or human consciousness. That is also the reason that no additional kind of matter could ever play any role for the explanation of anything on earth including humans. Consequently, physics and the other natural sciences, which are all based on physics, claim to explain every possible phenomenon in the world of our direct experience in terms of ordinary matter and interactions between material constituents. So far, this explanation works very well, and now even the human mind and human consciousness have been materialistically explained by the author (Prost 2016; 2017). Consequently, physicalism includes materialism and every naturalist who automatically is a physicalist must automatically be a materialist as well.

Now the next step is obvious. Naturalism, physicalism, and materialism claim that any object is made of matter. That must be the case because matter was the only substance created in the big bang. Actually, because of the negligible effect of dark matter and dark energy on anything on earth, we can even say that every object of our direct experience is made of ordinary matter. But if every object of our direct experience is made of ordinary matter, that automatically means that it can be reduced to matter. The laws of nature don't allow any gap. There cannot "emerge" any objects that can't be reduced to their material constituents. This would lead

automatically to substance dualism. But substance dualism is ontologically impossible within naturalism because naturalism claims that only one substance was created in the big bang, namely matter. The emergence of any different substance would require new laws of nature and/or the abandoning of the current laws of nature. But that would be in contradiction to our definition of naturalism, namely that naturalism can explain everything based on the current laws of nature. But might there still be an alternative? If substance dualism is impossible within naturalism there might exist the so-called "property dualism." Property dualism claims that the human mind and human consciousness/phenomenal experiences are properties which are related to the brain but cannot be reduced to the brain. First we have to ask what a property is. A property is always related to an object. Only objects can have properties.[6] A property describes any kind of effect that the object has. Let us look at some examples. The object sun has the properties of temperature and brightness because the sun heats and illuminates the solar system. The earth has the property of mass because the earth attracts all objects on earth with gravitational force. Most objects have the property of color because they reflect a specific part of white light with which they are hit. We see that a property is always connected to an object and is an expression for the effects the object has. Consequently, per definition a property has no genuine ontological status but is always linked to an object and consequently can always be reduced to an object. That makes property dualism logically impossible. Even if the human mind and human consciousness/phenomenal experiences were just properties of the brain, they would be automatically materialistic and reducible to the brain. At any rate, the human mind and human consciousness are not just properties of the brain; they are special configurations or special abilities of the brain.

It still could be claimed that properties are ideal and gain an ontological status via idealism. But again this doesn't help. The author has proven that idealism is not correct and ideal objects do not exist (Prost 2016). Every idea only exists first as a language-representing neural pattern in a human brain.[7] At any rate, idealism would lead to substance dualism. It would be necessary to explain in which universe ideas exist (not in ours!), how this other ideal universe is connected with our universe and how interactions between the two universes occur. Because the path of idealism cannot be used within naturalism there remains again only the understanding that properties are related to objects, and objects are material, consequently properties can also be reduced to matter. Above, we have seen that substance dualism is ontologically impossible within naturalism; now we have proven that property dualism is logically impossible within naturalism. Wittgenstein would call the sentence "Within naturalism there exists a view which can be described as property dualism' as nonsensical. Terms are used in an inappropriate way. Dualism is a way of placing different entities of the same ontological category in relation to each other."[8] Property is defined as an addendum/a description of an entity. Consequently property has a different ontological status than the entities included in the definition of dualism. Therefore the sentence "Within Naturalism there exists a view, which can be described as property dualism" is in the same category as Wittgenstein's famous example "Is the beautiful more or less identical than the good?" (Wittgenstein 1998) Both sentences are nonsensical. Again, property dualism is logically impossible. Consequently materialism includes reductionism and every naturalist who is automatically a physicalist and a materialist must automatically be a reductionist as well.

We have proven that naturalism, physicalism, materialism, and reductionism are basically identical. But we have also conceded that natural sciences and physics are not yet complete. What do we have to think about attempts to suppose that a different substance besides matter might still exist? Some philosophers assume that the basic substance of the universe might be consciousness.[9] This view is sometimes called "panpsychism."

Panpsychists see themselves as naturalists who assume that naturalism still lacks the discovery and description of the additional substance of consciousness. What does this actually mean? There are two possible alternatives: Alternative 1 would assume that consciousness is a constituent of matter; alternative 2 would assume that consciousness is a property of matter. In alternative 1, we can distinguish between three possibilities. In alternative 1a, consciousness caused the big bang and created space, time, and matter. Consciousness set the initial configuration and the initial parameters (18 natural constants) in a way that the current universe evolved with conscious creatures such as humans. Actually, we can easily see that in this account consciousness can be replaced by a creator, by God. Now the same principle has to be applied which is applied to all religious questions: They cannot be solved by natural sciences. By definition alternative 1a cannot be part of naturalism. In alternative 1b, consciousness particles are the constituents of matter. That means that quarks and electrons are built from conscious particles. That is possible but also meaningless. A principle of nature is that the characteristics of higher objects are responsible for effects. What does this mean? The characteristics of quarks are responsible for the formation of protons and neutrons but their features no longer play any role at the next higher level, the level of protons and neutrons, anymore. The characteristics of protons and neutrons are responsible for the formation of nuclei but their features no longer play any role at the next higher level, the level of nuclei, anymore. The characteristics of nuclei are responsible for the formation of atoms but their features no longer play any role at the next higher level, the level of atoms, anymore. The characteristics of atoms are responsible for the formation of molecules but their features no longer play any role at the next higher level, the level of molecules, anymore. Consequently, in higher levels, there would not be any effect of conscious particles even if these were the constituents of matter. Alternative 1b would be possible but would not be able to explain consciousness. In alternative 1c, consciousness would have been created together with matter and would interact with matter. Does that mean that consciousness would interact with every material particle? If so, it could be assumed that this interaction would be stronger with big organic molecules than it is with simple matter such as rocks. Eventually, consciousness would create consciousness in complex living creatures. But now the question is how does this work? What kind of entities are the constituents of consciousness? What kind of interaction exists between conscious entities and matter? Why have we been so far unable to detect conscious entities and conscious interactions? Here, we have to introduce a dogma of naturalism and logic. Everything which exists must cause effects. Vice versa: Anything which does not cause any effects does not exist! Consequently, it must be denied that consciousness was created in the big bang and exists as an additional substance in the universe as long as conscious entities and their effects are not measured directly. That has not been the case so far! Also alternative 1c cannot be included into naturalism without contradictions. Alternative 1, that consciousness is a substantial part of the universe, is not possible within naturalism.

What about alternative 2? The assumption here is that every material entity has the property consciousness. Again, in this account, consciousness would not play a significant role for simple structures such as rocks, but comes into play for complex living creatures. But now we have to remember that we have defined properties as the possibility of material entities to cause effects. Thus, the assumption could be that complex biological structures cause the effect of consciousness. But what is affected? The brain? What part of the brain? Other molecules? What kind of effect is it? What happens in lower life forms, which don’t have consciousness? Or does every life form posses consciousness? Is consciousness then the same as life? This account creates more questions than answers. Eventually, it leads to a circle and consciousness creates consciousness. And again we

have to emphasize that this version is a kind of property dualism and that properties are always connected to objects. Thus, even if material particles did have the property consciousness that would lead to physicalism, materialism, and reductionism, at any rate, the assumption that every material object has a property called consciousness has not delivered a working model so far. This assumption is obviously due to a lack of understanding of natural sciences and to the previous failure to explain the human mind, human consciousness, and phenomenal experiences in a natural way.

Summarizing, we can say that the only meaningful definition of naturalism is the definition we have given above: Naturalism is the assumption that every entity in the universe can be explained by natural sciences based on the current status of knowledge. It is nonsensical to claim to be a naturalist under the assumption that current natural sciences cannot explain everything but it will possible in the future when new discoveries have occurred. Panpsychism cannot be part of naturalism. But as mentioned above, this does not mean that we claim that pure naturalism is true. We have already indicated that there is the possibility that God caused the big bang and fine-tuned the 18 natural constants in a way that the universe developed the way it did. This development could eventually have led to humans. To this point, religious naturalism is identical with pure naturalism except for the cause of the big bang. As the author has shown (Prost 2016; 2017), the critical development for humans was the development of declarative language, which led to verbal thinking. The account of the Abrahamic religions would claim that after the evolution of verbal thinking, God gave humans an immaterial soul to guide them in moral decisions. The interaction between an immaterial soul and the human brain would indeed currently not be detectable by physics or neuroscience. The religious account represents substance dualism. That means that substance dualism is in general possible but not within pure naturalism. But the account of the Abrahamic religions is pure naturalism with the addendum of the non-materialistic soul. We have called this view religious naturalism. Consequently, naturalism in general can explain the evolution of the human mind and human consciousness but does not exclude the existence of an immaterial soul. But anyway, because naturalism can explain the human mind and human consciousness and phenomenal experiences, there is no need for the assumption of additions to naturalism and physics for just that purpose. Consequently, following the principles of Occam’s razor, all assumptions about additions of naturalism to explain the human mind, human consciousness, and phenomenal experiences can be dropped. But now it has to be determined whether the author’s explanation of the human mind and human consciousness and his reduction of phenomenal experiences to matter really close the explanatory gap and solve the hard problem.

3. Conceivability of Zombies

As mentioned above, one of the centerpieces in Chalmer’s argumentation against materialism is the conceivability of zombies. The argument goes as follows: It is conceivable that zombies exist. Zombies are supposed to be creatures which are physically identical to humans but lack phenomenal experiences. Because zombies are conceivable they are also possible. If it is possible that creatures exist which are physically identical to humans but lack phenomenal experiences, then phenomenal experiences cannot be physical. Materialism is not correct. The general form of this argument is that everything which is conceivable is also possible. Though this argument seems to be widespread in philosophy, it is just wrong. Not everything which is conceivable is also possible. That can easily be seen when we consider the popular *Star Wars* movies. In the *Star Wars* movies, like in most science fiction movies, it is conceived that travelling at a speed greater than the speed of light is possible. Indeed, without this conceivability all these movies would not make any sense. But

actually, this assumption is not real. It is absolutely not possible to ever travel at a speed greater than the speed of light. It is simply forbidden by the laws of physics, and we know already that these laws can never be violated. So obviously it is very conceivable that we could travel with a speed greater than the speed of light but despite the conceivability it is not possible. Consequently, we see easily that not everything which is conceivable is also possible. Moreover, the author can conceive that hares dress like humans and speak like humans. Actually, that is the basis for a lot of fairy tales. The author can also conceive that these human-like hares paint eggs and hide them. That means the Easter bunny is conceivable. Consequently, the Easter bunny should be possible—but we can also conceive that Easter bunnies do not exist! The class of arguments that something which is conceivable is also possible should be called the "Easter bunny arguments." They are all nonsensical and should never be used anymore.

Besides the logical error of the zombie-argument, this argument also shows a lack of understanding of naturalism and natural sciences. The assumption was that zombies and human are physically identical. Then the laws of physics require that they show identical behavior. Two physical systems that are identical with the possible exception of their location in time and space will always have the same characteristics/properties. Let's illustrate the principle with the example of helium gas in a box. The constituents of the helium gas are helium atoms, which are all identical. If we assume that the gas is very cold, all the helium atoms are in their so-called ground state. In addition to their intrinsic properties, they have a position in space and a velocity. If we now envision another box with the same number of helium atoms with the same relative positions to each other and the same velocities both helium gases would show exactly the same properties. Conclusion: In naturalism, systems with the same physical characteristics/configurations show exactly the same properties/behavior. As a consequence, zombies are not possible within naturalism. For the conceivability of zombies, substance dualism is required. The claim to be a naturalist and believe in the possibility of zombies is contradictory; it is logically impossible.

4. The Linguistic and Logic Errors in the Alleged "Hard Problem"

Though the zombie argument is not suitable to disprove materialism, it has to be examined whether the general argument might be true, namely that materialism is not able to explain what it is like to feel something. First, we have to define "feelings" and, more generally, our previous term "phenomenal experiences." Phenomenal experience can be divided into internal and external phenomenal experiences. We can also use the more scientific terms "internal and external sensations." Let us remember that we used the terms "internal and external sensations" in our definition of consciousness above. Generally, sensations are the reason for all activities of living creatures, even of such simple creatures like procaryotes or of plants. Sensations initiate actions. In less complex life forms, these actions are spontaneous and are called reflexes. They are innate and represent instincts.[10] In animals with brains, actions must not always be spontaneous anymore but can also be initiated delayed after some conscious processing. That leads to the conclusion that sensations indeed play a functional role. As we will see a little bit later, this can happen directly or indirectly. What we see here right away is the fact that sensations or phenomenal experiences are absolutely not unique to humans. All animals with brain have phenomenal experiences. We will show later what differentiates human phenomenal experiences from animals' phenomenal experiences.

In order to better understand sensations or phenomenal experiences, we will discuss some examples which apply to animals as well and start with internal sensations or internal phenomenal experiences. One of the most

prominent internal sensations is pain. As we see immediately, pain plays a very important functional role. There are many different kinds of pain, which have different origins and initiate different kinds of actions. If an animal hits a sharp object, it will feel a stinging pain. If an animal touches a hot object, it will feel a burning pain. If an animal has some inflammation, it might feel a dull pain. In the case of stinging or burning pain, the animal will immediately retract the affected body part. In the case of dull pain, the animal might just rest to give the body the opportunity of self-healing. Characteristic for pain is indeed that a kind of quality is connected with every kind of pain. Therefore, the term "qualia" is often used instead of the term "phenomenal experiences." There is also a very individualistic aspect. Only we can know how our own pain feels. Can we explain what happens in the brain? All kinds of internal sensations (external as well) create characteristic neural connections in the cortex, which we call "neural patterns." That means that all neural patterns for pain have some similarities, which classify them as pain, and some differences, which classify them as a special kind of pain, and some more differences, which represent the intensity.[11] Besides that, generally all neural patterns are at least slightly different, even if they indicate the same kind of pain.[12] Actually, this shows that indeed phenomenal experiences are materialistically realized in the brain, namely as neural patterns. And it also explains why they are so individualistic. Is this enough to explain how it is to feel pain? Yes, the phenomenal experience of pain is just a special neural configuration that represents a quality and can be called "qualia." Vice versa: Some special internal sensations/phenomenal experiences create special neural patterns in animals with brain. In the case of pain, they don't feel pleasant! Depending on the type and also on the intensity of the sensations, an animal shows a characteristic behavior, as we have explained above. The example shows that the external phenomenal experience of pain is indeed materialistically realized in the brain, namely as a neural pattern. As mentioned before, all of this applies to all animals with a brain as well. That means that all animals with a brain have internal phenomenal experiences which are reducible to matter, namely to special configurations of the cortex, to neural patterns.

The question is whether there might be something special about humans that makes it impossible to reduce human phenomenal experiences to brain states. The specialty of humans that differentiates humans from all other animals is our advanced declarative language. That leads to the fact that humans can make a verbal assessment of any kind of internal (and external) sensation. Humans can say that they have pain. Even more, they can say whether the pain is light or violent. Even more: they can say whether it is a burning pain, a dragging pain, a stinging pain, a dull pain, or any other kind of pain. That now brings us closer to the misunderstanding that is the key error in the alleged hard problem. Indeed, all phenomenal experiences have some kind of quality and are individualistic. This is the reason that nobody can know (so far) what someone else feels when she says that she feels a special kind of pain with a special intensity. It is only possible to imagine what the other person feels from one's own experience. If someone tells us that she feels a violent headache and if we had also once felt a violent headache, we can at least a little bit imagine how the other person feels. But we cannot exactly know it. If we never experienced a violent headache ourselves, we can't even imagine what it feels like. The simple reason for the lack of knowledge is that it is impossible with ordinary language to exactly describe some kind of pain so that everybody else knows what kind of pain it is! This is why Jackson was right with his example about Mary—that it is impossible to imagine how a phenomenal experience feels if one has not had a similar experience oneself. So we have two problems: Firstly, there can be an approximate understanding of what another person feels only if one has already had similar experiences oneself. Secondly, we cannot exactly describe feelings due to linguistic restrictions. Consequently,

someone else can never know exactly what we feel. But does this lead to the conclusion that phenomenal experiences cannot be reduced to matter, namely to states of the brain? That is absolutely not the case. We have explained above that phenomenal experiences are special neural configurations. If it were possible to exactly measure these neural configurations and create a map of their origin, it would indeed be possible to know exactly what another person feels. If a neuroscientist could measure the actual neural patterns of a test person and compare these measurements with the map the neuroscientist would know what the person was experiencing. But again even if the person who performs the measurement could describe from the map the feelings of the examined person she would only know what kind of feeling it is if she had once had an experience of the feeling herself. Now we have to emphasize that we could apply this method to animals as well. We can assume that the neural patterns for pain might be similar at least in mammals as compared to humans. If one were to measure a neural pattern for stinging pain in a chimpanzee or Nagel's bat, one could be pretty sure that the chimpanzee or the bat was actually feeling a stinging pain.

But now we have to include the human difference into our considerations. The human language comes into play and creates an additional issue. Humans add a verbal assessment to the initial phenomenal experience. Actually, this means that they neurally connect the initial neural pattern with language-representing neural patterns. Now the verbal assessment of a special phenomenal experience can differ between individuals. If a certain pain, e.g., being stung by a needle, is applied to two different persons the neural patterns created will probably be very similar.[13] But one person can be accustomed to pain, whereas the other person might be extremely sensitive. Consequently, the first person will classify the pain as light whereas the second person will classify the pain as violent. As mentioned, the classification is realized in language-representing neural patterns. So even if the primary neural patterns are very similar, the second neural patterns, which make averbal assessment of the pain, might be completely different. Either way, everything is realized as neural patterns in the cortex. What we see already from this example is that describability is the real issue. Even if the same pain is applied to two different persons and creates an almost identical neural pattern, both persons can assess and describe their individual feelings differently. What we have shown is that the verbal assessment is a difference to animals, but also the verbal assessment of phenomenal experiences proves to be reducible to matter.

To consolidate our explanation, we will use some examples for external phenomenal experiences. How does it feel to taste something? In principle, humans have just four kinds of taste: sweet, sour, bitter, and salty.[14] And again these phenomenal experiences of taste play an important functional role. A baby or an infant will only like sweet food, because sweet indicates healthy and nutritious. Sour indicates unripe, bitter indicates rotten. Salty is good in the appropriate concentration, not good otherwise. Again these principles also apply to mammals, at least to a certain extent.[15] Anyway, when a human tastes some sweet food a corresponding neural pattern is created in the cortex. This neural pattern is characteristic for sweet. The same applies for the other tastes. Now we are in the same situation as above. Tasting sweet is identical with having a characteristic neural pattern in the cortex. Sweet is just an arbitrary name for this neural pattern. But again, if someone tells us that a special food is sweet we must have had the experience of sweet ourselves in order to know what she is talking about.[16] The second issue is that the assessment of what sweet is might differ between individuals. One person would call an apple sweet whereas another person would call the same apple sour. Consequently, a third person would call the same apple sweet-and-sour. If we now extend the term "taste" to what we normally mean almost endless nuances come into play. Anatomically, now the nose plays an important role as well. For example, humans can obviously differentiate between many herbs. Parsley, dill, basil, chives, tarragon, and cilantro, all

taste different. But how can these tastes be described? They can't at all: Parsley tastes like parsley, dill tastes like dill, chives taste like chives, tarragon tastes like tarragon and cilantro tastes like cilantro. In contrast to our example of pain, language has not even developed terms for all the different tastes! Of course, every taste creates a characteristic neural pattern in the cortex. After having experienced the different tastes and having learned the names of the herbs, one can connect language-representing neural patterns with the phenomenal experiences of the different tastes. The example of taste now shows that phenomenal experiences must not always play a direct functional role. Here, the phenomenal experiences serve for information gathering. If previous experience has classified some taste as especially tasteful, a pleasant feeling might be created by experiencing that particular taste. Of course, this pleasant feeling is again realized as a neural pattern. On the other hand, in most cases, it will probably happen that the information is just stored and might lead to actions later. Again this example shows how phenomenal experiences are realized materialistically in the brain. And again we see that it is just a linguistic issue to verbally describe phenomenal experiences. And again we see that it is indeed necessary to have had the phenomenal experience to know how it feels. And again, the last two issues do not lead to the conclusion that phenomenal experiences are not reducible to brain states.

We have now proven that the logic behind the alleged hard problem is erroneous. Phenomenal experiences are indeed realized physically and materialistically in the brain, namely as neural patterns. And all animals with a brain have phenomenal experiences as well, also realized as neural patterns. In naturalism, there is no other option than a materialistic realization for phenomenal experiences. For the assumption of the non-reducibility of phenomenal experiences, substance dualism is obligatory but this again is contradictory to naturalism. Property dualism is logically impossible in all worlds, also in substance dualism. So what caused so many philosophers to believe that there is a hard problem? It is the confusion of reducibility and describability. Indeed, this is already evident in the fact that phenomenal experiences are used to explain the specialty of human consciousness without granting the same to animals. We have shown that the decisive difference between animals' and humans' consciousness is the human language. Human language in turn created the question "What is it like to feel something?" But this is a linguistic problem, not an ontological problem! When we apply this question to the internal phenomenological experience of pain the answer is painful. When we ask the person in pain if she can be more specific, the answer might be "I feel a stinging pain such as being stung by a needle or an insect." As we can easily see, we quickly run into tautologies! The basic feeling pain gets an arbitrary name—but that's just a definition. To be more specific, a property is added that is derived from the cause of the pain (e.g., stinging, burning). The same principle applies to tastes. The basic tastes just get arbitrary names. To be more specific, the answer is something like "Parsley tastes like parsley" or more generally "The food tastes like the food tastes." Again we see that we get tautologies. That makes these kinds of questions senseless. Either they lead to definitions or they lead to tautologies.

It gets worse when we ask a question such as "What is it like to see red?" Again, "to see red" is "to see red." If the question is specified into "How does it feel to see red?" the answer is "It doesn't feel at all!" Seeing something doesn't generate any feelings.[17] It is just information gathering. The question "How does it feel to see red?" is in the same category as the question "How does it taste to see red?" It is linguistically neither allowed to apply the verb "to feel" to seeing nor allowed to apply the verb "to taste" to seeing colors. Wittgenstein would classify both questions as nonsensical. The same applies to the question "How does it feel to be a human?" With this kind of question, Nagel aimed to prove the non-reducibility of human mental states to the brain. But actually, there is no feeling of being oneself. If we sit in a restaurant with friends and have a

conversation, we don't have a feeling of being ourselves. If we sit at a computer and write a letter, we don't have a feeling of being ourselves. Even if we take a long lonely walk on the beach, we don't have a feeling of being ourselves. What we can do is to reflect about ourselves. If we think about who we are and what we want, this reflection might generate some feelings. But these feelings are connected to our reflection process. They don't represent a feeling of being ourselves. Again the question "How does it feel to be a human?" proves to be nonsensical. A close look at Nagel's argument would also lead to the conclusion that it is also not possible to reduce mental states of a bat to brain states. But where is the alleged logic behind the argument? It is very often argued that everything that we can know about material configurations of brains and minds comes from a third-person perspective whereas phenomenal experiences represent a first-person perspective. What is overlooked here is the fact that third-person and first-person are of the same kind; they are both humans. As already mentioned above, in the future neuroscientists might be able look into the brains of their human test persons and measure their neural configurations. Then they could ask the test persons what was going on in their mind at that time and map this with the measured neural patterns. Now they could become test persons themselves and another neuroscientist could perform the same procedures. If the same neural configurations were measured the neuroscientists would know exactly which neural configurations in their brain caused special phenomenal experiences or special thoughts in their mind! Consequently, for neuroscience there is no principle difficulty to transform first-person experiences to third-person experiences; the difficulties lie in the technical execution. Actually, it has to be conceded that this might never be possible because every measurement has to be done on a cellular level, on the level of single neurons. But generally, first-person and third-person experiences are of the same kind, they both are neural patterns. There is no principle difference between them.

Summarizing, we can say that phenomenal experiences are indeed reducible to matter, namely to a special kind of neural connections, which we call neural patterns. If this were not possible, the phenomenal experiences of animals would also be non-reducible. Even more, we have mentioned that phenomenal experiences are sensations and that even "lower" life forms have sensations. If the hard problem were indeed valid, the non-reducibility would apply to all kinds of life! The first error in the development of the alleged hard problem lies in some logical contradictions. In naturalism, every aspect of nature must be reducible to matter. In naturalism, substance dualism is ontologically impossible. Property dualism is logically impossible. The second error is a linguistic problem. The question "What is it like to feel something?" is either senseless or nonsensical. Either the answer is a tautology as in "How does it feel to feel pain?" with the answer "To feel pain is painful" or there is no answer as in "How does it feel to see red?" because seeing red does not create any feelings at all. Conclusion: There is no hard problem at all! The hard problem is a pseudo problem! The alleged hard problem is not the non-reducibility of phenomenal experiences; it originates in the difficult describability of phenomenal experiences. One of the major fallacies of the hard problem is not to realize that non-reducibility always leads automatically to substance dualism.

5. The Real "Hard Problem"

The formulation "There is no hard problem" is not totally correct. There is indeed a hard problem but it is a different one. The real hard problem is to figure out how neural connections are formed and what they look like. As the author has shown (Prost 2016; 2017) consciousness works in different steps. In the first step, internal and external sensations create special neural connections, called neural patterns. These neural patterns

show some features which are characteristic for what they represent. When we see the setting sun, the neural pattern shows some characteristics which are typical for red and for round, because the setting sun looks red and round. When we see children playing with a red ball in the street, the corresponding neural pattern shows the same characteristics for red and round as well because the ball looks red and round. How does the brain do that? What do these characteristics look like? The next action is that the brain has to compare current neural patterns with old, previously created neural patterns. Is the current pattern new or already known? How does this comparison process work? We only know that this process is extremely fast because normally we have this knowledge available instantaneously. As we have shown in our definition of consciousness and have further elaborated in the discussion about the functionality of phenomenal experiences sensations are processed in order to initiate actions. That means that in the second step the brain has to connect different current neural patterns in a certain predefined way so that a special part of the brain, normally the motor cortex, can send signals to muscles in order to initiate actions, here to perform muscle movements. We call this procedure a neural process. How are neural processes realized? How can the cortex synchronize the different areas of the cortex that are involved in such a short time?

What we know so far is that neurons connect with each other. But what kinds of connections represent information? How is information generated by neural connections? What mechanisms are responsible for the accessibility of experiences and knowledge? How does learning work? During learning neural process, processes must be established by neural connections in a way that these neural connections can be used with actual sensations. We remember that that was the purpose of consciousness, namely to use internal and external sensations to initiate actions after some processing. There can only be one conscious process at the same time. On the other hand, there are several subconscious processes, which also concur for consciousness. How does the cortex decide which process is consciously performed? These kinds of questions are a real hard problem for neuroscientists. Due to the explanation that consciousness is a general feature of brains that also applies to animals and not to only to humans, consciousness and conscious processing can first be examined in animals. A lot of knowledge can then be transferred to humans. The only feature of consciousness which has to be studied exclusively in humans is the declarative language. That means neuroscience has to figure out what our language-representing neural network looks like and how we integrate verbal thinking into conscious processing.

Notes

1. The author insists on the condition “in its current status of knowledge.” It does not make sense to claim that everything can be explained by natural sciences and make assumptions about future extensions of natural sciences. Of course, natural sciences are not yet complete. But every speculation about new discoveries just leads to nothing. Then it would be possible to speculate that in the future natural science will be able to explain demons and witches and that they will play a role in the explanation of the human mind. Then by definition everything can be explained by naturalism. We will discuss this in detail below.

2. Every year, there is a conference with the title “The Science of Consciousness.” Last year the conference took place in Tucson, Arizona, USA with about 1000 participants. The understanding of what consciousness is was almost as numerous as the number of participants (www.consciousness.arizona.edu).

3. As the author has shown (Prost 2016; 2017) animals with a brain can act rationally and logically. They use internal and external sensations for their conscious processing. Therefore, this kind of conscious processing is called “sensory thinking.” In addition, humans can also act based on language. Therefore, they add “verbal thinking” to “sensory thinking.”

4. Here, we have used both terms “phenomenal experiences” and “consciousness” simultaneously because that is the way Chalmers and others use the term “consciousness.”

5. Einstein has shown the equivalence of matter and energy. That is the reason dark energy can be considered a form of matter.

6. Now the question about possible properties of “ideas” could be posed. As the author has shown (Prost 2016) “ideas” are also material objects, they are language-representing neural patterns. Consequently, properties of “ideas” are also connected to objects.

7. Actually, this is even true for “ideas” created by computers. The “idea” does not gain any meaning unless a human brain has approved that “idea.”

8. That is the reason why “substance dualism” is meaningful. “Substance dualism” claims that there are two different entities in the same ontological category. The ontological category is “substance,” and the two entities can be “matter” and “soul,” or “matter” and “ideas.”

9. In these accounts, the term “consciousness” is obviously used with the meaning of our initial definition.

10. For plants only the term “reflex” is used, not instinct, even though it is basically the same from a view of functionality.

11. But again, the neural patterns for a special pain have similarities and the neural patterns for the same intensity have similarities.

12. That is due to the fact that on the cellular level no two configurations can ever be identical. They can only be very similar.

13. We have to emphasize that this is an assumption. So far, we don’t know what exactly neural patterns look like. It is also possible that the same sting creates different neural patterns in different persons. But that would apply probably more to the intensity of the feeling, not so much to the kind of feeling.

14. New scientific publications sometimes identify a fifth kind of taste, called umami.

15. Of course, there are also huge differences because the kind of nutrition is extremely different between different species. For example, scavengers love rotten food.

16. Corresponding to Jackson’s Mary, a person who has some defect of the tasting organs and cannot taste sweet would not know how sweet tastes.

17. Of course, we do not want to apply the question to the situation when we see a person we like or a person we dislike.

Works Cited

Chalmers, David. “Explaining Consciousness: The Hard Problem.” *Journal of Consciousness Studies* 2.3 (1995): 200-19.

---. *The Conscious Mind: In Search of a Fundamental Theory.* New York: Oxford University Press, 1997a.

---. “‘The Hard Problem’ and ‘Moving forward on the Problem of consciousness.’” Ed. J. Shear. *Explaining Consciousness: The Hard Problem.* Thorverton: A Bradford Book, MIT Press, 1997b.

---. “Phenomenal Concepts and the Explanatory Gap.” Eds. T. Alter and S. Walter. *Phenomenal Concepts and Phenomenal Knowledge: New Essays on Consciousness and Physicalism*. New York: Oxford University Press, 2006.

Jackson, Frank. “What Mary Didn’t Know.” *Journal of Philosophy* 83.5 (1986): 291-5.

Levine, Joseph. “Materialism and Qualia: The Explanatory Gap.” *Pacific Philosophical Quarterly* 64.4 (1983): 354-61.

Nagel, Thomas. “What Is It Like to Be a Bat?” *Philosophical Review* LXXXIII, 4 (1974): 435-50.

Prost, Michael. *Die Entschlüsselung des menschlichenBewusstseins (The Mystery of Human Consciousness Unraveled)*. Wiesbaden: Springer VS, 2016.

---. “The Solution to the Mind-Body Problem: The Complete Reduction of the Human Mind to Matter, Namely to the Brain.” *Sociology and Anthropology* 3.4 (2017).

Wittgenstein, Ludwig. *Tractatus Logico-Philosophicus*. Mineola: Dover Publications, 1998.