

How Do You Know That I Do Not Know How It Feels to be a Bat?

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Abstract: This paper has provided an objection to Nagel's bat theory as the defense for physicalism. Thomas Nagel has used a bat theory to point out the contradiction feature between a scientific theory and phenomenal consciousness. In this work, I argued that what we know as phenomenal consciousness may just be our memory system, which can be explained by science.

Keywords: consciousness, philosophy, bat theory, physicalism, Thomas Nagel, criticism, mind and body, personal identity

1. Introduction

In this paper, we will present Nagel's consciousness objection to materialism's theory of the 'mind and body problem'. First, we shall explain materialism's mind-body theory. Then reconstruct Nagel's consciousness objection. Lastly, we will defend materialism with the argument that memory can explain consciousness and subjectivity.

Before discussing Nagel's bat theory, a question – what exactly is the mind and body problem? According to the Stanford Encyclopedia, ontologically, the mind and body problem discusses what is the mind (mental states, consciousness, and so on)? Other than as an ontological problem, the causal relation is also being widely discussed in philosophy [1]. To give an example, when you open your internet browser to enjoy a live streaming cooking show, two kinds of events -- mind events and physical events -- have happened here. "Open your browser" is a physical activity – an action you do with your body. Differently, your enjoyment is a mind event— an event that happens in your mind and does not affect the external world. Then, a problem arises — how do your mind and physical events interact?

2. Dualism and Materialism's Approach

A Dualist like Descartes may argue that the mind and body are separate. For instance, in his sixth meditation, Descartes as a Dualist believes that mind and body are separated since we can grasp them separately [2]. While Descartes introduces God into his argument to help justify his theory, he only demonstrates the relation between mind and body, but he does not provide his readers with an explanation of how the body and mind interact. In fact, every dualist cannot explain the question of how the body and mind interact, because the connection is necessary when people differ them as two distinct existences. Alternatively, this obstacle does not apply to materialists, because they hold a

theory that the mind is, actually, identical to the brain, which is a part of the body. According to Stanford Encyclopedia, “this holds that every property (or at least every property instantiated in the actual world) is identical with some physical property” [3]. Thus, the type physicalism, engaging in mind and body problems, hold the idea that the mental states of our mind can possibly be reduced to some kind of theory in science, such as physics. In other words, while we may describe a mental state differently from physical terminology, they are actually the same thing. For instance, an article from McGill university states that “...when you stub your toe on a rock, you feel pain at that specific spot on your body. The pain is often so sharp and so localized that you might be tempted to believe that it’s your toe itself that’s experiencing the pain. But that’s not really the case at all.” [4]. The exert manifest argument applies here; the pain, that we used to consider a mental state, may actually trigger some physical experience. Additionally, this physical experience not only stays localized at one’s perception spot but connects to one’s nerve system. The pain, which has been recognized as the activity coming from the “soul” by dualism, is actually from a series of physical changes. Thus, differs from dualism, materialists do not support any metaphysical assumptions about the mind. Instead, they believe that it is an illusion to recognize body and mind movements separately because those two events actually both belong to brain states, which can be explained by science. Another example, ‘happiness’ can help the reader to understand. The feeling of happiness is actually a physical event known as sympathetic excitation. We, as everyday people without a scientific background, just call this excitation ‘being happy’. To give a anecdotal example; a boy may be called Benjamin by his classmates but called Ben by his family. The two names refer to the same person. Likewise, due to a lack of professional knowledge, we may name some mental states, such as emotion, differently, yet they can be ultimately paired with scientific terminology.

3. Nagel’s Bat Theory

Thomas Nagel points out that a problem may exist if we think our minds can be fully explained by science. Specifically, Nagel thinks that mental states have a feature called ‘phenomenal consciousness’ which contradicts the feature of science. The phenomenal consciousness refers to the unique perspective of how you process events, such as your sensory experience, and emotions.... At the heart of Nagel’s theory is that everyone feels what it is to be “me” in a unique way. Two elements, objects perceived and the subjective perceiving agent (us), are necessary for us to learn about the world. This refers to the fact that even perceiving the same object, we need to use our own subjective perspective to process it, which makes our consciousness different and unique. For instance, one person may find a frozen yogurt delicious and shares it with a friend. However, the friend comments it was too sour for them. The sense presented to you by the frozen yogurt should be the same, yet how you process the sense makes each of us have a different experience with the frozen yogurt.

Based on the subjective feature of phenomenal consciousness, Nagel provides an example of a bat. Readers may wonder why Nagel has chosen this specific animal, a bat, instead of a human. “Bats are not blind, but..., they do not use their visual system very much...This appears to create difficulties for the notion of understanding what it is like to be a bat” [5]. Human beings usually perceive the world through five senses, including visuality. Thus, the claim that one faces obstacles to conceiving what is like to be, another human, sounds not so convincing. Distinctively, bats perceive the world through echolocation experience, a unique sensation that helps them to locate or avoid surrounding objects, which is a kind of phenomenal consciousness that humans do not have. Based on this, Nagel thinks the bat’s feeling would be impossible for the human reader to conceive as humans do not share the same phenomenal consciousness with bats. This obstacle will enforce the belief that the consciousness or the feelings of being oneself are subjective that cannot be explained by neutral scientific language. This is because science is objective, which means it can always be explained neutrally with no human interpretation. For instance, a scientific fact; water boils at 100 degrees

Celsius. There is no subjective character to this, no matter who boils the water, the boiling point will not change. Alternatively, phenomenal consciousness does possess subjective character, such as ‘only bats can know what it feels like to be a bat’. Hence, Nagel thinks this contradictory element, subjective phenomenal consciousness, will place a challenge on materialism’s reasoning that every mental state can be explained scientifically [6].

4. Some Objections in the Philosophy Field

Nagel’s bat theory has stimulated many philosophical discussions. One of the very popular objections claims that possible stimulations may exist other than the imagination. Nagasawa puts forth “*Surely, we cannot know what it is like to be a bat just by reading textbooks on physics or biology. However... we can know it by carefully imagining or simulating how a bat... flies and detects the location of its target*” (Nagasawa, 2003). This objection states that reading textbooks or descriptions of what it is like to be a bat may not assist humans to grasp the impossible subjective phenomenal consciousness of being a bat. Yet, the impossibility is not in the transportability consciousness of the mind but the perceiving means. Thus, Nagasawa proposes the possibility that we may be able to learn what is like to be a bat by imagining and simulating. Readers may also possess doubt about the feeling of being a bat and whether this can be learned even by imagining or stimulating, while at least Nagasawa’s objection demonstrates that Nagel’s conclusion cannot be set in stone until this possibility is solved.

Also, the difference between homo-species and non-homo-species usually the element being doubted by skeptics. Specifically, because of their unique echolocation system, Nagel has chosen bats instead of other animals or humans to use. This choice of bat indeed creates obstacles for us to feel the difficulties in the transmission of consciousness. While it also brings the problem that cross-species examinations seem not fully equal to homo-species. In other words, Nagel has only demonstrated that humans cannot imagine the feeling of being a bat, but he has not provided the evidence that humans cannot imagine the feeling of being another human. For instance, we cannot use Microsoft Word to open up a .pdf document because the two software have different coding, while one can open .pdf documents with a .pdf reader. Thus, it is still possible for us to experience each other’s consciousness within humans. Since our major focus is on the body and mind theory of humans instead of all-natural species, whether consciousness is transmutable between the same species may still need to be discussed.

In addition, Nagasawa mentions that a distinction may exist between “...*knowing a feeling of a being and the physical characterization of a being.*” In detail, Nagasawa states, “*Nagel’s ultimate goal is to undermine physicalism by showing the difficulty of giving a purely physical characterization of...a bat. However, is not the same as knowing a physical characterization of what it is like to be a bat*” [7]. Nagasawa states that, thinking of ourselves, we do know the feeling of being ourselves. Yet, we may find it hard to use any physics terms to fully describe it ourselves. Thus, the fact that we cannot even use physics terms to describe to others what we do know of our consciousness, demonstrates that describing one thing in physics terms should differ from the phenomenal consciousness. In fact, even though Nagel successfully justifies his belief that subjective consciousness is not transmutable, this transmutable feature still faces a challenge when applied to objecting to materialism because their claim is about reducing mental states to physics descriptions.

5. Possible Eastern Approach Inspired by Zhuang Tzu

Alternative to Western approach and solutions. A dialect between, Zhuang Tzu and his friend Hui Tzu, in Chinese philosophy may provide the reader with a different objection, how could Nagel speak for another human that who cannot know what it feels like to be a bat. To be specific, in the chapter “*Qiu shui*” in “*Zhuang Tzu*”, Zhuang Tzu and his friend Huizi have seen a fish jump out of the water

while they are spending time together. After Zhuang Tzu comments on the pleasures of fish, Huizi asks him, “*You, sir, are not a fish, how do you know what the joy of fish is?*” [8]. Zhuang Tzu replies, “*You, sir, are not me, how do you know that I do not know what the joy of fish is?*” [8].

In fact, the problem Zhuang Tzu and Huizi are concerned about in this story is not a mind and body problem because, at that time, body and mind theory was not a concern. Instead, their focus is on their debating skills. Nevertheless, this exert provides us with a new angle and inspiration for Nagel’s argument. In the text, Zhuang Tzu mentions an important question, when Huizi questions whether he knows the feeling of being a fish, how can Huizi *know* if Zhuang Tzu knows what it's like to be a bat. This question points out that Huizi assumes consciousness is transmutable when he presupposes that Zhuang Tzu, a fellow human, could not know what it's like to be a fish, based on his knowledge that he, himself is a human, does not know. Yet, this presupposition itself entails that consciousness is transmutable, at least within the same species. When applying to the case of the bat, Nagel knows that he cannot conceive what is like to be a bat, because he is not one and applies this thought to all human beings. This thought itself demonstrates that Nagel also has the intuition that consciousness is transmutable. Specifically, there are two reasonable possibilities:

1) Nagel thinks consciousness is untransmutable between individuals, including animals. Thus, he does not know what we are, as another individual, capable to feel. In this way, his argument cannot prove that every human being is unable to know the consciousness of a bat. Thus, it is theoretically possible as a human to feel what it's like to be a bat, unless every human being denies it.

2) Nagel thinks consciousness is transmutable between the same species because he presupposes that what he cannot feel other human beings cannot feel. Thus, he has some presupposing that consciousness is transmissible within the same species.

Obviously, Nagel needs to provide further justification for either of the above. His premise and argument have some contradictions, if consciousness is untransmissible then his premise also cannot be transmitted to others.

6. More Objections on Nagel

We still may consider further the subjective phenomenal consciousness within humans. However, we can put forth think there is no phenomenal consciousness. What accounts for the feeling of being ‘me’ is just accumulated memory. Instead of using phenomenal consciousness to perceive the world, you are just pairing your sensation with your ‘database’ of accumulated memory. First, we will explain the problem in Nagel’s theory and then explain the memory proposal.

You ->use your phenomenal consciousness to perceive the object -> idea generated

You -> perceive frozen yogurt->pairing with your previous experiences ->idea generated

Thinking about your response to the question of whether you like frozen yogurt, you are able to answer it immediately without pause. However, you will probably need more time to think when being asked “do you like the lady sitting next to you?” This difference leads to a question: why is the responding time different if phenomenal consciousness decides what we see? To explain this with a metaphor, phenomenal consciousness is like perception through sunglasses, which means the world you see is already colored and you should be able to describe it instantaneously. However, the fact is that you need different time lengths to process different objects. For example, if the phenomenon consciousness exists, you will have some preference, for example, you like tall girls; so, you should be able to make judgments according to your preference the moment you see the lady next to you. However, the hesitation proves that you have no instant answer for it, which runs counter to Nagel’s thinking that we always have the feeling of being ‘me’. Moreover, one may argue that this comparison is problematic because feelings surrounding attraction to a someone should be much more complex than frozen yogurt, which we all would agree with. However, there is a difference between describing and thinking. When wearing ‘consciousness glasses’ to see the girl, what you see through the glasses

is your answer. But the fact that you may need a longer time come to your opinion demonstrates that what you see is not your opinion. Instead, you perceive the object and then use some brain functions to process it. Hence, Nagel's objection is still problematic.

We can potentially fix the consciousness problem, for materialists, by pointing out that Nagel mistakenly takes scientifically explainable memory as consciousness. Every sensory experience, things you have perceived through your senses, has been stored in your memory. You pair the novel sensory experience with the previous sensory experience. Then, you will give positive feedback to familiar things and give negative feedback to unfamiliar things. Yet, one may argue that memory cannot explain everything. Thinking again about our frozen yogurt case, you and your friend have different comments because of your different memories. This is not because of a single piece of memory but accumulated memory, ph strips can help to visualize this.



Figure 1: ph test strips [9].

You have been raised in a different environment and accepted different food in the past. The first time you had something sweet, you probably just feel fresh about this taste. However, in the future, every sweet thing you taste will be stored in your brain in the form of a memory, and you will develop a sequence of sweetness degrees just like the color sequence of the ph tests. Every time you have a new sensory experience, you will pair it with your sequence and get a conclusion. Therefore, your friend thinks this frozen yogurt is sour because this taste experience is at a very low degree in their sequence of sweetness degree. In other words, everything you have experienced will become part of one's memory and causes your individuality. The individuality or subjective phenomenal consciousness is the sum of all of one's previous experiences rather than of a metaphysical soul. Although this is a philosophical topic, some scientific result seems to support this assumption. As the biological sciences and biomedical engineering professor, Arnold from the University of Northern California states *"We found that the process of forming new memories changes how brain cells are connected to one another. While some areas of the brain create more connections, others lose them"* [10]. As the quote illustrates, our new experiences will change our brain cells as they form new memories. Then, these new memories will actively change the arrangements of the brain cells. The close connection between brain rearrangement activity with the formation of new memory demonstrates the importance of memory in, what usually has been called, 'consciousness'.

One may argue that the limitation of memory makes it hard for us to accept that a new sensory experience is being paired with every memory we had before. The answer to this argument proposed here is that humans have different layers of memory and human capacity cannot fully control it. Memory is like a library with many bookshelves and what you experience is the books sitting on the shelves. You will take notes after you read a book, then, you will place the book back on the bookshelf.

The further in life, you progress, the more “books” you have stored. Hence it will be hard for you to find a book instantly because there are too many shelves to search for it on. Under certain conditions, such as hypnosis or re-experiencing, you still can locate it. However, going through the notes, the surface level of memory is much easier. Freud, in his “Five Lectures about Psychoanalysis” also states that when conducting hypnosis with a patient who has hysteria symptoms, patients are able to give the doctor some clue about these ‘stuck’ thoughts. Then, patients may be able to recall the memory that they think they have forgotten when the doctor discusses those clues with them after they wake up [11]. In this sense, memory is similar to a huge supermarket, Costco for example. While this may seem strange at first, Costco has very organized racks where you can find products easily without help. The stuck thoughts can be thought of as the things in the warehouse. Sometimes we can reason confidently that there are more things in the back, but we cannot list those items easily without ‘a special moment’. For instance, we have all had the experience where we have only had fleeting contact with someone. It is so short that you have already forgotten that person moments later. However, you can still just about recognize that person the next time you pass them in the street, much like the warehouse, where we know things exist in the back without entering the warehouse, but we can never know what exactly is in the back. A customer must ask for help from staff to access the items hidden away. For their part, the doctor is like the salesperson in Costco who possesses the key to accessing the warehouse. Hypnosis seems to be the key to one’s “memory warehouse”. There is, however, no assurance, that you can find what you want, even if you get access to the warehouse. Freud’s observation is very interesting because by thinking reversely, we may be able to reflect on brain cognition. Hence, we do not possess an ‘inventory list’ of our memory stock, which makes the reflection of our consciousness becomes more difficult.

Moreover, the statement that we give negative feedback to unfamiliar things and positive feedback to familiar things may lead to another doubt -- sometimes we have a positive feeling towards an unfamiliar thing and vice versa. We can answer this in that your judgment of familiarity based on your surface memory is not accurate, because we only know what may be recorded by the memory, but we do not know how does our brain records things. We have neglected most of our sensory memory, making it impossible to judge the familiarity of the things within your deep memory. We can again turn to the internet recommendation function for an explanation. Sometimes when browsing the internet, ads about the shoes you have desired for a while pop up. You think this is a coincidence because you never used this device to search for this shoe style. However, a while later, you accidentally find that your friend has mentioned it once and it has been recorded through targeted marketing. This is similar to the memory recording process. In another word, by performing actions, you always have an imprint left on your memory surface. However, the environment, i.e. other people passing by, or the small talk from the next table, has all been recorded in your memory in some way, which we do not fully realize. For instance, you may feel joyful when you taste some unfamiliar Chinese kung pao Chicken, but most Westerners will not find white fungus soup delicious. Both of these are unfamiliar things, while, the major elements, sweet or sour, of Kung Pao chicken, can be paired as familiar to your sensory sequence but the white fungus cannot.

Regarding some assumptions to explain the feeling of pain or other emotions. They are all due to different degrees of familiarity, but our languages have made it more romantic. For example, self-abasement and modesty are actually the same things -- the unfamiliarity of being accomplished. However, we use a different word to represent it based on the context. More examples can be provided: when someone compliments himself, two comments, pride or confidence, can be made. It is because we value people’s self-compliment based on our memory. Hence, I believe every mental state can be paired to the memory system, which science can explain.

7. Conclusion

In conclusion, materialism may contain many unfolding questions because of our limits on technology and neuroscience. It is, however, too early to invite the metaphysical soul into this mind and body field when we still lack understanding on how our brain works. In his essay, Nagel thinks subjective consciousness is an obstacle for materialism to justify that all mental states can be explained by science. Yet, I suggest that consciousness, mentioned by Nagel, is just a misunderstanding of memory. However, the memory functions may need more effort from technology to examine.

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