

What is “being visible”?

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A hard trick set by the brain

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(1) Introduction

The paper, "Where is the mind?" was uploaded on the Internet earlier, and the paper, "What am I?", which focuses on Chapter 4, Section 3 of the paper, was also uploaded on the Internet. In these papers, "The world created by the brain activity is defined as the world of the mind." Based on the definition, it was explained that the world which is seen before our eyes, including our own body, is “the world of the mind”. Furthermore, I have come to the conclusion that the existence we think of as "Self" is also an inherent existence in our own mind. These are conclusions based on the premise that the material world and our physical body exist.

I think that is an unacceptable conclusion for most people. The main reason for this seems to be the belief that our body we see before our eyes is the physical body, and that the space in which that body exists is the material world. I received several comments, or rather objections to the conclusion, but many of them could not refute the logic that leads to the conclusion.

In order to reach the above conclusion, it is essential to understand that the world which is seen before our eyes is not the material world, but the world of the mind created by the brain activity. The starting point is to understand “What is “being visible”?”, and if you understand its essence, you will reach the above conclusion logically. On the other hand, if you don't understand it, you may think, "What a stupid idea!".

Therefore, in this paper, I would like to focus on the point "What is “being visible”?" and explain in detail. My point is described in detail in the above two papers. By reading this paper, if you question the common knowledge that "the world which is seen before our eyes is the material world", I hope you will read above papers as well. The URL of the papers are noted in "(6) Afterword".

On difference between Japanese and English

Before starting the subject, there is something I would like to tell you first. My native language is Japanese. I am worried about the difference between Japanese and English. That

is, the difference between the meaning of “look at” and “see”.

In Japanese, “見る; miru=look at” is used only as a transitive verb (vt.) and not as an intransitive verb; (vi.). On the other hand, “見える; mieru=see, visible” is used only as an intransitive verb and not as a transitive verb.

In translating this paper into English, “look at” is used as a transitive verb, and “see” and “be seen” are used as intransitive verb, in addition to them “be visible” is used as the same meaning of “be seen”. I am wondering about if there is a difference from the original usage of English, but I hope you will keep in mind that they are going to be used as such meanings.



For example, I will indicate as follows that you turn your gaze to a cat,

I look at a cat. (vt.)

I am looking at a cat. (vt.)

and indicate the cat which appears in your field of vision as a result of looking at it as follows.

I see a cat. (vi.)

A cat is seen. (vi.)

A cat is visible.

On the definition of the words

The following three expressions will often be used in the text, but they all mean the same world. Namely, when we (I, you) open our (my, your) eyes, a colorful world appears before our (my, your) eyes. These expressions all show the world, though common knowledge says that it is the material world.

Three expressions;

“The world which is seen before our (my, your) eyes”.

“The world seen before our (my, your) eyes”.

“The world before our (my, your) eyes”.

(2) Two verbs "look at" and "see"

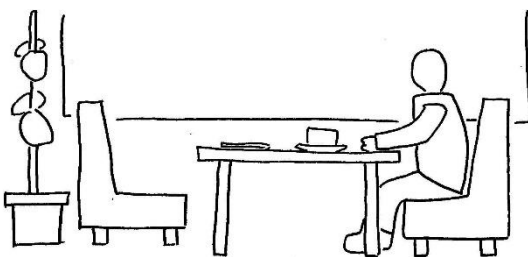
If you close your eyes, you will not be able to see the world seen before your eyes, and if you open your eyes, you will be able to see it again. You may think that it is a matter of course, but the truth is often hidden in what is considered as common knowledge.

Two verbs are used for the act of looking at: "look at" and "see". If asked, "What are you looking at?", you would answer, "The coffee cup seen before my eyes." If asked, "What do

you see?", you would answer, "The coffee cup seen before my eyes." It is important to note that both verbs are used for the same coffee cup which is seen before your eyes. In other words, the coffee cup seen before your eyes is interpreted as "the object of being looking at" and at the same time as "the object of being visible".

For the two verbs "look at" and "see", there is an idea that "look at" denotes an action, and "see" describes a state. It certainly seems to capture one aspect, but it seems not to explain why they are used for the same object which is seen before our eyes.

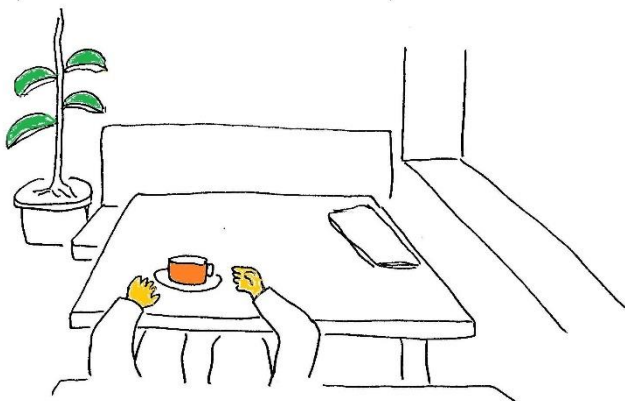
Fig.1 **The material world**



person's physical body toward the coffee cup in the material world. There is no room for question.

However, this is a story in the material world, and as far as that is concerned, there is no problem. But there is a problem in defining "look at" under the interpretation that "the world which is seen before our eyes" as the material world and "our body seen before our

Fig.2 **The world seen before our eyes**



Certainly, the meaning of the verb "look at" is clear. Figure 1 shows the material world. It depicts a scene in which one person is looking at a coffee cup, as a substance, that exists in front of the person's physical body. In this figure, it is expressed as "looking at" to refer to the action of the person who turns the eyes of the

person's physical body toward the coffee cup in the material world. There is no room for question. However, this is a story in the material world, and as far as that is concerned, there is no problem. But there is a problem in defining "look at" under the interpretation that "the world which is seen before our eyes" as the material world and "our body seen before our eyes" as the physical body. This is illustrated in Figure 2, which shows the world seen before some person's eyes. In this figure, it is problematic to interpret that the person whose part of body is shown in the figure is "looking at" the coffee cup in front of the person. The reason will be explained later in the section "(5) What is "being visible"?"

Now, what does "see" mean on the other hand? Let's check the process of "becoming able to see an object". First, an object exists in the material world → the electromagnetic waves reflected from it reach the eyes → an image is obtained at the retina by the convex lens of the eyes → the image is converted into an electrical signal and sent to the center → the object becomes to be seen. It is only

through this series of processes that it is interpreted as "becoming able to see an object". In fact, if you close your eyes, you will not be able to see the object, because your eyelids block the process of the image reaching the retina.

Here's a problem. If we close our eyes, we will not be able to see the world before our eyes, and if we open our eyes, we will be able to see it again. If we talk about what happens by opening our eyes, it means that an image of the outside world is obtained on the retina. I don't think there's any objection to the idea that if an image is not focused on the retina, we won't be able to see the world before our eyes. Then, the cause is the image that is obtained at the retina, and the result is the world we see before our eyes. In other words, the information obtained by the retina is transmitted to the center, and the phenomenon that occurs there is the world which is seen before our eyes.

The conclusion is that the world we see before our eyes is the one created by the brain activity, and it is not the material world but "the apparent material world", so to speak. If replaced it with the word "visible", it means that "being visible is the scene itself before our eyes".

Most people would not be convinced by these conclusions. One of the causes is the idea that "The world we see before our eyes is the one created by the brain activity", and the other is the idea that "being visible is the scene itself before our eyes". Regardless of the former, you may think that the latter is just saying the same thing as common knowledge. But while this seems to be similar with common knowledge superficially, it is quite different. This will be clarified later in "(5) What is "being visible"?"

The main reason for not being convinced by the former conclusion comes from the interpretation of one's own body. Namely, when you open your eyes, your body appears before your eyes. You are sure that it is your physical body. The physical body exists in the material world. You can see the world by opening your eyes. Therefore, you are convinced that the world seen before your eyes is the material world, as common knowledge says.

The conclusion that "The world we see before our eyes is not the material world " may be a ridiculous one to you, and I am worried many people will stop reading the manuscript. But I hope you will be patient for a while.

(3) The apparent material world

If we say that the world we see before our eyes is the material world, various contradictions arise. Chapter 3, Sections 1~3 of the aforementioned paper "Where is the mind?", gives counterexamples such as color, double image, and inverted retina image, etc.,

but here I would like to introduce the following two counterexamples.

Counterexample on the visual acuity table

People with myopia can understand it well. If you take off your glasses or contact lenses, the direction of the cut of the Landolph's ring in the vision acuity table is blurry and you can't see it well. It is because the image reflected on the retina is blurred, and not because the vision table itself in the material world is blurred. The cause is the blurred image reflected on the retina, and the result is the blurred world seen before your eyes. In other words, the world seen before your eyes is the result of the act of looking at, and it is the one created by the brain activity.

In response to such a conclusion, you may have the impression that such a thing is impossible. However, if we think that the world we see before our eyes is the material world, a fundamental contradiction arises. Namely, it leads us to a false idea that the material world itself is blurred and we are looking at a blurred world. Again, the material world is not blurred.

The same goes for people with farsightedness. For them the letters at hand are blurred because the letters reflected on the retina are blurry, not the letters themselves in the material world are blurred. The unconvincing, as I will talk about later, lies in "the existence of Self" that accompanies one's own body, and is caused by the thought that "I am looking at". This point will also be explained later in the section "(5) What is "being visible"?"

For those with good eyesight, I would like to give you the following counterexample on color.

Counterexample on color

The idea may not be convincing to those who think that the world seen before their eyes is the material world, but color does not exist in the material world. Electromagnetic waves are reflected from objects in the material world, but of course they are not accompanied by colors. Color arises only after the following process, that is, they reach the retina and stimulate cone cells, which are a type of photoreceptor cell, are converted into electrical signals and transmitted to the center. The image reflected on the retina, or more precisely, the information processing at the center is the cause, and the colorful world you see before your eyes is the result. In other words, the world you see before your eyes is not the material world, but the one created by the brain activity.

I understand that this is a difficult story to accept. If you disagree with this conclusion or

have doubts about the counterexamples, I would like you to think for yourself about how to explain these two counterexamples.

Since the world seen before our eyes is created by the brain activity, it is limited by the brain's ability to process information, and the material world may not be reproduced correctly in the world seen before our eyes. With regard to time, for example, there is a limit in terms of the speed of information processing. When we look at a timer displayed in 0.1-second increments, the timer itself is definitely repeating numbers from 0 to 9 on the screen. But we can't read them all. It's easy to try. Try to see how many numbers you can read on the stopwatch. I think it's about 4 or 5 at most. It is the limits of the information processing of the brain.

As for space, at first glance it seems that the situation in the material world is clearly reproduced, but that is not true. The range that can be clearly reproduced is only a small part. Try putting a picture of a person in front of you and look at it. Of course, you can see it clearly and know who it is. Then try to move your perspective away from the photo. If you shift it just a little, you won't be able to tell whose face it is. You know that only a small range of correct reproduction is achieved. This is because the density of photoreceptor cells at the retina is limited to a very narrow area called the fovea, and the limits of information processing can be seen.

(4) Interpretation of one's own body

In order to understand the two verbs "look at" and "see", it is necessary to correctly understand the meaning of our own body. It is difficult to understand that the world seen before our eyes is "the apparent material world", and I think it is not acceptable to you. What is even more unacceptable is the interpretation of our own body seen before our eyes. The details are explained in Chapter 3, Section 3 of the paper "Where is the Mind?", so I would like to limit myself to a very brief explanation here.

I think there is a deep-rooted belief that your body seen before your eyes is your physical body. That's no surprise. By being able to make move your hand at your own will and to interact with the objects seen before your eyes, you can obtain various senses such as sight, hearing, touch, pressure, and warmth, etc.

For example, when you try to drink coffee from the coffee cup seen before your eyes, you bring your hand closer to the cup of your own volition. By grabbing the cup, you will know the hardness and warmth of ceramics, and by taking a sip, you will taste the aroma and unique bitterness of coffee.

Although the premise of this thesis is that the physical body exists, all these intentions and

sensations are psychological phenomena, not physical phenomena. The fact that they exist with your own body seen before your eyes means that the body seen before your eyes is not a physical body, but “the apparent physical body” created by the brain activity.

I mentioned the "counterexample on color" earlier. If you look at your hand seen before your eyes, you can see color on your hand. It shows that the body seen before your eyes is not a physical body, but the apparent physical body created by the brain activity. However, I don't think you will be convinced for that reason alone.

(5) What is "being visible"?

The word "see" is paired with the word "look at". In other words, "By looking at an object, I can see it". The meaning of "look at" is simple and clear, as mentioned earlier. Turning the eyes of the physical body to objects in the material world is both the act of look at and the meaning. However, the use of the word "look at" in the world seen before our eyes requires careful consideration. That is because the world seen before our eyes is the one created by the brain activity, in other words, “the apparent material world”.

Furthermore, our body which is seen before our eyes is “the apparent physical body” created by the brain activity as a result of the act of looking at it. The apparent physical body does not have the function of the eyes. There may be an objection that we can see them by looking in a mirror, but they are apparent eyes that appear through the act of looking at them. Naturally, the apparent eyes do not have the function of “looking at”. Therefore, it follows that "In the world which is seen before our eyes, the act of looking at is impossible."

In fact, "Becoming being visible by looking at" means that there must be a chronological relationship between "look at" and "being visible (see)". Certainly, there is no problem if we define the act of “look at” in the material world, but there is a problem in defining the events of "look at" and "being visible (see)" in the world seen before our eyes. This is because in the world which is seen before our eyes, "We are looking at the objects that are being seen" rather than "They become being visible by looking at them", and there is no relationship before and after in chronological order.

Also, in the section "(2) The two verbs of “look at” and “see”", it was explained that if asked, "What are you looking at?", you would answer, "The coffee cup seen before my eyes", and if asked, "What do you see?", you would answer, "The coffee cup seen before my eyes". But it is a mistake to interpret the coffee cup before your eyes as "the object you are looking at", and in fact it is "the object of being visible to you".

We think, "I'm looking at the coffee cup before my eyes", but we are not actually looking at it. Why we think that "I am looking at it even though I am not looking at it" becomes a

breakthrough in understanding the essence of “the existence of Self”. However, this is not the subject of this paper, so I would appreciate it if you could refer to the above paper “What am I?” or “Where is the mind?”.

Similarly, the verb “see (be visible)” also means “I can see a coffee cup”, which is associated with “the concept of Self”, and this thought makes it even more difficult to understand the meaning of “see (be visible)”.

Then, what is “being visible”? As you know from the previous stories so far, the world seen before our eyes is the one created by the brain activity, so “we are not looking at it”. As mentioned earlier, “being visible” is paired with the act of “looking at” and is generally considered to be “becoming being visible by looking at it”. However, in reality, it means that we see it even though we are not looking at it. From the fact, the following conclusion can be drawn: “Being visible” means that “objects created by the brain activity” exist where we think “I see them” or “They are visible to me”. Of course, I’m sure that the meaning of “exist” in this case is different from that of the existence of matter.

If applied it to Figure 2 above, the coffee cup seen before our eyes is created by the brain activity, and the meaning of “see (being visible)” is that it “exists” at the very position on the table seen before our eyes, which is thought to be seen “by us” or “to us”.

However, this conclusion may seem no different from common knowledge. That is because common knowledge holds that the material world always exists around us even while we close our eyes and when we open our eyes it appears before our eyes. Certainly, the material world always exists around our physical body, but it doesn’t occur that the material world appears before our eyes when we open our eyes.

The world seen before our eyes is the apparent material world, and the body seen before us is the apparent physical body. When we close our eyes, the material world doesn’t exist around our apparent physical body. Nevertheless, we misunderstand that it exists around our apparent physical body, and that it can be seen by opening our eyes. I apologize for repeating myself so often, but the world seen before our eyes is the one created by the brain activity. By closing our eyes, the world seen before our eyes once disappears, and when we open our eyes, it is created again before our eyes by the brain activity.

The fact that “Being visible even though there is no act of looking at” leads us to the issue of “recognition”. But I will omit it because it is not the subject of this paper. Details are described in Chapter 4, Section 2 of the aforementioned paper “Where is the mind?”. I hope you refer to it.

The philosopher George Berkeley is said to have left the phrase “to be is to be perceived”, from the standpoint of idealism. Since I am talking from the standpoint of science, not

philosophy, I am in the position that the material world and the physical body exist, not from the position of idealism. I'm never going to comment on his arguments, but I'm interested in his words. If imitate his expression, would it be "Being visible is the existence"? Of course, as mentioned above, I believe that the meaning of existence in this case is different from the meaning of the existence of the matter.

(6) Afterword

I've talked about the meaning of "being visible," but how was it? I think the majority of people thought that "That is impossible". But the logic is simple. It is a fact that if an image of the outside world is not reflected on the retina, it is impossible to see the world before our eyes. The question is how the image reflected on the retina is related to the world seen before our eyes.

It is unclear how the brain activity creates such a vast world seen before our eyes, and how our body seen before our eyes is able to adapt to the material world. However, if you think about how cleverly our physiological aspects are organized, you will understand that it is not so unlikely.

For example, our body is said to be made up of about 60 trillion cells, by which various organs, brain, heart, internal organs, etc., are made up. And these organs are organically connected by nerves, blood vessels, etc. It is surprising that these organs with such a huge number of cells and various functions derives from only one fertilized egg. Furthermore, the scheme that the genetic information that makes it possible is determined by the combination of only four bases, and that the bases transmit genetic information in a double helix structure, is surprising.

In this way, the mechanism of our physical body is beyond our imagination, but at the same time, it seems that the world of our mind is also beyond our imagination.

What I have told so far is in direct conflict with common knowledge. However, even if the conclusions so far are correct, it does not mean that there will be any change in our daily lives. So, I think it is much difficult for you to be convinced. That's the reason why I subtitled the paper, "A hard trick set by the Brain".

At the beginning of the paper, I mentioned that "The world created by the brain activity is defined as the world of the mind." I think there may be objections to that as well. However, if you think about how your emotions and thoughts are projected onto the objects seen before your eyes, it would be convincing.

For example, if a kitten or a puppy appears before your eyes, you will know that the feeling of being cute arises in your mind, and at the same time, that the kitten and the puppy



before your eyes exists with the feeling of being cute. On the other hand, if a huge tiger suddenly appears before your eyes, bares its fangs and barks, you will feel fear. And you will feel that the fear overlaps with the tiger itself. Although I don't want to experience it.

By imitating feature extraction, which is one of the methods of human information processing, AI's information processing capabilities have advanced dramatically. On the other hand, AI technologies such as image generation AI and language generation AI are advancing rapidly. In the future, on the contrary, the time may come when we will learn about the mechanism of human information processing from these AI technologies.

Until now, the nature of the world we see before our eyes has been studied, but from now on, I think it will be necessary to study from the perspective of how the world seen before our eyes is created.

The seemingly simple problem of "being visible" actually has a complex background. The understanding is the starting point for the exploration of "the world of the mind".

If you are interested in the world of the mind that is different from common knowledge, please refer to the following papers. If you can't access them well with the URL, you would be able to search them smoothly with the title including subtitle.

Thesis Address

English version: Where is the mind? A hard trick set by the brain

URL: <https://www.where-mind-e.com> (110pages on A4 paper)

(Note: The paper is a PDF file of 110 pages, which is quite a lot, but I tried to explain it in an easy-to-understand manner.)

日本語版：心はどこにあるのか？ 脳によって仕掛けられた難解なトリック

URL: <https://www.where-mind-j.com> (A4版110ページ)

(注：論文はPDFファイルで110ページとかなりの分量ですが、分かり易い解説を心が

けています。)

English version: What am I? A hard trick set by the brain

URL: <https://www.what-am-i-e.com> (30pages on A4 paper)

(Note: It focuses on Chapter 4, Section 3 of the paper "Where is the Mind?" It is about 30 pages in A4 size, and you can read it on the homepage or download a PDF file.)

日本語版：私とは何か？ 脳によって仕掛けられた難解なトリック (A4版 30 ページ)

URL: <https://www.what-am-i-j.com>

(注：論文「心はどこにあるのか？」の第4章第3節を重点的に解説しています。A4版 30 ページほどで、ホームページ上で読めるとともに、PDF ファイルをダウンロードして読むこともできます。)

(7) Self-introduction

Since it is a story that is too out of common knowledge you may think that it is a story from a person of fake science, so I would like to introduce myself briefly. I (Shigeru Shiraishi) finished the doctoral program (majoring in psychology) at Waseda University (Tokyo/Japan) and then worked as a part-time lecturer (psychology) at a university in Tokyo for many years. I am well aware that having a specialized education does not necessarily prove that the person's ideas are scientific. However, it seems to say bossy things, but I think I have trained to develop logic by accumulating objective facts. I would appreciate it if you could read the manuscript critically and send me your impressions and objections from "3 Opinions and Questions".