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Where and What: Two Experiments for Dualism

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Abstract

In 2007, two experiments that have now become very famous have appeared in the neuroscientific literature. With over of one thousand of citation, that moved neuroscientist to speculate about the self- representation and other conscious phenomena and to create new experiments, Henrik Ehrsson and Bigna Lengenhagger produce in two studies out of the body experiences in healthy subjects. The literature reports this kind of experience as consequence of neurological disease or drug use. In this article, I will prove that the where, and the what, of the out of the body experience and the normal experience are something different from the bodily one and I will argue in favor of some kind of dualism and, in particular, a dualism called property dualism.

Key Words: mind-body problem, out-of-the-body experience, philosophy of mind, dualism, neurophilosophy

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Introduction

The philosophical background of the neuroscientific research is very important. If we chose for one of another of philosophical position about the composition of the mind, we have strong consequences about what is the object and how should be the methodology of neuroscientific research.

Actually, we can think about three main position about the composition of the mind: The substance dualism, the property dualism and the materialistic reductionism. The substance dualism maintains that the mind and the brain are two completely distinct things but that can interact the one to the other. The materialistic reductionism says that there is, talking about the mind, one and only one reality: the material reality. The property dualism, instead, argues that what composes the mind is partly material and partly immaterial.

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From a logical point of view, we can exclude the substance dualism as contradictory. The mark of the material reality is in fact the causal efficacy and if the immaterial substance of the mind can interact causally with the material substance of the brain we have to consider that the immaterial substance erroneously considered as such. If the immaterial substance interacts causally with the material substance of the brain, we have to consider the immaterial substance of the mind something material too.

In what follows I will discuss two interesting neuroscientific experiments to argue in favor of the dualism of properties and show that mental reality is partly material and partly immaterial. I will argue from an empirical point of view in favor of such a background, consequently the point of view of materialistic reductionism will fall.

In 2007, two experiments that have now become very famous have appeared in the literature. Henrik Ehrsson and Bigna Lengenhagger produce, in healthy subjects, out of the body experiences. The literature reports this kind of experience as consequence of neurological disease or drug use. In this article, I will show that the experiments' outcomes, for how they are designed, they "argue" in favor of a philosophical position called dualism and, in our case, of that dualism called *dualism of properties*.

I will describe the experiments and the findings to make clear the authenticity of the experience involved. Once shown the authenticity of the out-of-the-body experiences involved, I will abandon the problem of how the experimenter obtained them. I will discuss then why these findings under-determine a philosophical position as dualism and what kind of dualism should we think about.

Two Experiments from 2007

Henrik Ehrsson define the out of the body experience "as the experience in which a person who is awake sees his or her body from a location outside the physical body" (Ehrsson, 2007). We can observe these phenomena in patients with stroke and in other abnormal personal conditions as in those who habitually use drugs.

The scientist speculates and experiments that they can induce a similar condition even in healthy patients. For first Ehrsson puts a camera two meters behind the subject. The camera "sees" the back of the subject and transmits the left image of the camera to the left eyes of the subject and the right image of the camera to the right eye. The subject now sees his back as if it were in the same spot as the camera.

To stimulate the out-of-body experience, the scientist touches the subject's chest with a rod and shows the same action to the camera without the subject being visible. This experimental apparatus provokes the illusion of looking at one's body from an external point of view. Ehrsson states: "the participants reported the experience of

sitting behind their physical bodies and looking at them from this location" (Ehrsson, 2007).

He hypothesized that "the illusion is caused by the first-person visual perspective in combination with the correlated visual and tactile information from the body" (Ehrsson, 2007). To demonstrate this hypothesis Ehrsson "hurts" with a visible hammer the illusory body of the subjects and he obtains a body experience as if the subject was really in the illusory position.

In a similar experiment from 2007, Bigna Lengenhagger and colleagues reach a similar outcome from the experimental conditions. The subject has an out of the body experience when in virtual reality the bodies are captured by a camera and reproduced in a different position, in front of the subjects and from the backward, when they are synchronously stimulated by a rod.

In the synchronous condition, the subjects state that their position in the experimental set is that of the illusory body perceived by the virtual reality as their own real body. As in Ehrsson 2007, what the experimenter induce is a proper out of the body experience. The experiment is therefore reproducible and falsifiable. What I will discuss now is the philosophical and theoretical outcome of these experiments.

The Set of the Experiments

For first, we must separate the wheat from the chaff and we have to ask ourselves "What is seen in the experiments from the subjects?" Without the physical stimulation and the production of the proper out of the body experience, we would be in a strange condition. What the subjects see is simply the images of the camera that projects the observer's body from a particular point of view.

The subjects in that condition do not report any particular strange experience, there is not any illusory body and, even if they report their body position as that in the videos, one could explain the experience like an error in perception. This is not the case because, as seen, the subjects do not commit an error like this. The illusory bodies are something more of the perception of their bodies by the subjects. They have the perception of the body and of the bodily sensation as they were in a position other form what they really are.

The stimulation of the body and the stimulation of the illusory bodies, the body that would be stimulated if it were really out there, as in sleight of hand, permits to the subject proving an out of the body experience. Moreover, Ehrsson shows that there really is an illusory body linked to well-defined body perceptions.

In fact, when he tries to "hit" the illusory body of the subjects with a hammer where it should be according to what they reported in

accordance with the experimental conditions and with the extracorporeal experience, the response of the real body is similar to that of a body that a hammer is going to hit. The experience caused in the experiments is not the perceptual experience alone. It is the experience of the subject to be in a different position despite that where its body really is.

Out of Body Experience and Dualism

One of the questions that seems to be prominent to us is "Where is the body experienced in the experimented out of body experience?" The body experienced in the out of body experience is not where the body is but is not elsewhere in the experimental set. There is an experience not congruent with the experience that the subject should have in normal condition.

The out of body experience and the normal experience have the same character. The first experience does not properly links the body while the second does. It is easy to infer that the where of the out of the body experience is not the where of the body.

The normal experience and the out of the body experience are similar. The where of the out of body experience and the where of the body are distinct two. There is nothing, in the set of the experiments, where the subjects indicate and feel they are. Under the hypothesis that the where of the experience is the same in the out of body experience respect to what should be the normal one, we can say that the where of experience is different from the where of the body.

My hypothesis is hard to deny. If the where of the normal experience is different from the where of out of the body experience and the same of the body, we should say contradictorily that the same kind of thing, an experience, has sometimes a kind of where and sometimes a different kind of where. The first physical should be where the body is, the second in a different kind of place.

The results are simply to demonstrate from the identity and distinction between the where of the objects and experiences.

W1(n) = W2(obe); this is our working hypothesis and says that the where of the normal experience and the where of out of body experience are of the same kind

W3(b) ≠ W2(obe); this is factual true, in the set of experiment the where of the body is of a different kind respect to the where of the out of body experience

W3(b) ≠ W1(n), from 1 and 2 we can deduce that the where of the body is not of the same kind respect to the normal experience one.

The experience has no causal efficacy except with the body and we can say that our result is in favor of some form of dualism. The experiments show that the mental reality is at least triadic. There is the electrochemical level, the plan of the experience and the neural effects on the body. The Ehrsson's hammer test is revealing in this sense.

The experimenter goes to strike the illusory body and the experience causes a physical response in the subject. We have to note that, the normal experience, unlike the out of the body experience, links the body in such a way that there is an agreement between the where of the body and the where of the experience. In the out of the body experiences, this agreement is lost.

Now a reductionist might say that the experiment shows explicitly that the electrochemical level is the same of experience. In this case, we could answer that, as seen, the where of the experience is not the where of the brain and that the where of experience is not the where of the electrochemical processes inside the brain. The fact that a change in experience correspond a change in electrochemical activation is not a problem for the property dualist.

We are not forced to say, contradicting ourselves, that the immaterial part causes a physical change, as in the dualism of substances, precisely because the immaterial is a part of the whole as an object that is partly material and partly immaterial is constituted. Think of a bag as an abstract object. Both by breaking up the bag with scissors (Our material part) and by unstitching the seams (Our immaterial part) the bag is no longer there.

The normal conditions make me think that there must be a specific correlation between the coordinates of the physical where and the coordinates of the where of the experience because, in everyday life, when I touch my hand in the experience a touch it in the physical world too. The out of body experience, in the other side, shows that after all the task of the senses is to be able to represent any type of experience.

There must be a precise mathematical correlation between what I encounter in experience and what I encounter in the physical world. Precisely because we must be able to investigate the physical world before any contact with it, we must be open to any type of experience. The abstractness of the mathematical relations makes this meeting possible and ensure that a reference system, a where, can be put in relation with another reference system, another where.

This line of reasoning leads us to one of the classic Kantian motifs. As for the time and space of Kant's transcendental aesthetic, our whole experience is the transcendent representation of the physical world and as a palette contains the possibility of any painting so the forms of experience, time, space, colour, form, contain the

possibility of representation of any experience in the physical world. (Kant, 1781)

The second metaphysical claim it is that the natural knowledge at a transcendental and naturalistic level is the "knowledge" and the "needs" shaped by the natural selection. The shape that evolution makes. In this sense, humans have to be open to every kind of experience and only to some kind of experience both because, to live, they have to be open to the environment before they really know something about it but they have to possess at least some instruments to live it for what it is. This is because the natural selection is not only a physical but a metaphysical dispositive too.

Another point is, as Ehrsson puts it: "Multisensory correlations are known to be important for self-attribution of single body parts in near-personal space. Thus, these correlations, in conjunction with the first-person visual perspective, are sufficient to determine the perceived location of one's own whole body. This finding represents a fundamental advance because the natural "in-body experience" forms the foundation for self-consciousness." (Ehrsson, 2007)

The findings tend to demonstrate that the self-consciousness it can be separated from the physical body and to be something pertaining the experience build up from the mind – brain. This is a second and important experimental point for dualism. It is hard to see how the nature of experience, distinct from the physical body, it can be reduced to the electrical activity of the brain.

The experience of the subject is the experience to be out of his body and to see it from an external point of view. This entire experience is what we should reduce to the electrical activity of the brain. We can do that if and only if the electrical activation has a part of qualitative properties like colours of our out of body experience, in such a way that the qualitative experience is the mental counterpart of electrical activity of the brain.

This is the logical conclusion of an inference that wants what has not causal power as something that cannot interact causally and directly with something other. If we think to the mind as something qualitative that has no direct causal powers, while brain activation has we can sustain this kind of dualism. As the property-dualism wants, we can think to a dualism that says that brain activity comprehends a material and an immaterial part.

This is the dual nature of experience as something different form the physical world. As for the where we can reason about the what. The out of body experience is something different from what is the physical environment. The experience to be in a place of the experimental set and to see his own body from the outside is distinct from everything is in the experimental set, the physical what.

Under the hypothesis that the what of normal experience has the same nature of the out of body experience, then the what of the normal experience is something distinct from the what of the physical environment. That can be proved with a demonstration similar to the where case. The hypothesis is hard to deny. We should admit that sometimes the experience is something physical and sometimes something different.

Conclusion

The experiments of Ehrsson and Bigna Lengenhagger and colleagues show that they can induce in normal subjects out of the body experiences. In the out of body experience, the where and what of the experience are different from the where and what of the physical subjects in its environment, in our case in the experimental set. The where and what of the out of the body experience is beyond reasonable doubt the same of the normal experience. Then, what and where of the experience is something different from the where and what of the physical set. The experiences have in fact not causal powers, as we have understood them.

If what I have shown is true, the findings of Henrik Ehrsson and Bigna Legenhagger can be used to validate the theory that argues, the dualism, that the experience of the subject and the physical environment are two distinct things. Theoretically, the theory preferred is the property dualism of the mind-brain opposite to the substance dualism that for logical and practical reasons we have shown it is hard to assert.

In other words, the experiments under-determine a theory showing that there are two worlds distinct one from the other the experiential world and the physical world. The first can communicate with the body and is at least in part physical as the brain signal but we should equally consider it something different from the second.

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