What are the Ramifications of a Hypothetical Mind-Body Theory?

Sam S. Rakover

Departmentof Psychology, Haifa University

Correspondence concerning this article should be addressed to Sam S. Rakover, Departmentof Psychology, Haifa University, Haifa, Israel 31905.

Contact: rakover@psy.haifa.ac.il

# Abstract

Since Plato and Aristotle, philosophers and scientists have attempted without success to develop a mind-body theory (Tmb) to explain the exact relation between the mind and the body, a solution which is based on an assumed connection between consciousness and the activity of the neurophysiological processes in the brain. The main concern of the present paper, then, is to address the question of why a successful Tmb has never been developed and widely accepted as true? In response, McGinn (1989) proposes that the human being’s cognitive system is not equipped to solve the problem. This contribution suggests another answer: If a hypothetical solution had been discovered, a number of “unintuitive consequences” would have emerged. These consequences would have interfered with the actual development of a Tmb. The paper discusses these ideas and arguments and finally suggests that it would be helpful to conceive of consciousness as an explanatory concept, which has yet to be explained.

Keywords: mind-body theory, consciousness, scientific methodology

What are the ramifications of a hypothetical mind-body theory?

# Introduction

Philosophers and scientific researchers have made continuous attempts to develop a mind-body theory (Tmb), based on an assumed connection between consciousness and the activity of the neurophysiological processes in the brain, but so far without success (for reviews see Rakover, 2018, 2021a). Rakover (2018, pp. 126-127) draws attention to several philosophers and researchers who insist that the mind-body problem has not yet been solved, and that the question of how the brain could give rise to consciousness has not been successfully theorized. It should be noted here that the intended reference of Tmb is not a correlation between two variables – conscious experiences and the activity of neurophysiological processes in the brain – but rather a particular mechanism that brings about consciousness or even the proposition that some of this mechanism’s attributes *are* consciousness. One reason for the methodological claim that a correlation between these two variables cannot function as an appropriate explanation for consciousness is that a correlation itself is no more than a phenomenon that needs a theoretical explanation – an empirical observation to be explained. Such an explanation, for example, may be based on a mechanism that describes how one variable (brain activity) gives rise to or causally affects the other (consciousness) (e.g., Neal & Liebert, 1986; Rakover, 1990).

The modern mind-body problem (also known as the problem of consciousness) was famously addressed by French philosopher, René Descartes, in the 17th century (see Hatfield, 2018). Since the body-mind problem is yet to be solved, this raises the perplexing question: Why is it that despite 370 years of debate about how the mind and body can be related and how they can affect each other, a solution to the problem continues to elude philosophers and scientists? A successful Tmb simply has not been developed. This issue is the main concern of this paper, and several responses will be explored. I will start with McGinn’s (1989) proposal and then suggest another three.

McGinn begins by suggesting that “We have been trying for a long time to solve the mind-body problem. It has stubbornly resisted our best efforts. The mystery persists. I think the time has come to admit candidly that we cannot resolve the mystery.” (p. 349). He then goes on to argue that the human cognitive system is not equipped to solve the mind-body problem, just as it is impossible for us to perceive the whole range of the electromagnetic spectrum. It could be suggested that human cognitive capacity is innately limited and unable to grasp the complex relation between the neurophysiological activity of the brain and consciousness. McGinn (1989) writes: “It is just that, in the case of the mind-body problem, the bit of reality that systematically eludes our cognitive grasp is an aspect of our nature.” (p. 366). He continues: “I have argued that we cannot know which property of the brain accounts for consciousness, and so we find the mind-brain link unintelligible.” (p. 359). Observations about the brain will not lead to any revelations about consciousness, and methods of introspection (i.e., observing one’s own conscious experiences) will not bring us any closer to an understanding of the relevant brain activity. Physical phenomena can be explained by purely physical accounts without involving conscious states such as will, belief, intention, and emotion.

McGinn’s approach, which has been called “mysterianism”, has been subjected to criticism that I will not discuss here (see e.g., Flanagan, 1922; Rowlands, 2007).

As mentioned above, the main aim of this paper is to attempt to answer the perplexing question of why a successful Tmb has not been discovered yet. Beyond McGinn’s proposal, which is based on the suggestion that the human mind is simply not equipped to solve the mind-body problem, I propose three approaches and will concentrate mainly on the last one.

## The First Approach

A successful Tmb has not been developed not because of the limits of human cognitive capacity, as McGinn (1989) suggests, but because of the limitations of scientific methodology which has been developed for research on physical and biological phenomena (the sciences). Perhaps this type of methodology is not appropriate for investigations into the phenomena of consciousness. It should be noted that this argument is not new. For example, at the end of the 19th century, German philosophers and researchers (such as Wilhelm Dilthey and Max Weber) posited a distinction between (a) the explanation (*erklaren*) of the natural world, i.e., research in the natural sciences, and (b) a meaningful understanding (*verstehen*) of the human world, i.e., research in the humanities and social sciences (see discussions in Grimm, 2016, 2019; Rakover, 1990, 2018, 2021b). Although this distinction is no longer accepted, most scholars agree that it is difficult to directly apply the research methodologies developed in the natural sciences to research in human sciences. This difficulty stems from the fundamental concept of consciousness (see, for example, Grimm, 2016; Rakover, 2018).

## The Second Alternative Response

A successful Tmb has not been developed because there exists a certain hypothetical undiscovered “hidden energy”, which constitutes consciousness and involves brain activity via certain interactive processes. The main justifications for this speculation are twofold: The first is the mere fact that a Tmb has not been discovered to date and the second is the analogy to two hypothetical terms in astrophysics, which were created to account for certain incomprehensible cosmological observations. One hypothetical concept relates to unobservable “dark matter” which is meant to account for the phenomenon of missing mass – the discrepancy between theoretical gravitational computation and the total visible mass in space; the other hypothetical term is unobservable “dark energy” which is supposed to explain the discrepancy between the theoretical calculation of cosmic expansion and the observation that the expansion of the universe is accelerating. Both hypothetical concepts were designed to close the gap between theory and observation. Similarly, the “hidden energy” hypothetical concept is intended to close the gap between brain activity and consciousness.

## The Third Alternative Response

A successful Tmb has not been developed because if a hypothetical Tmb (HTmb) is discovered, several unreasonable and strange ramifications, which I shall call “unintuitive consequences”, will emerge. These unintuitive consequences are, in one way or another, obstacles in the path to developing a real Tmb. This will be elaborated as follows: I will first deal with the methodological framework of developing a HTmb and then discuss the unintuitive consequences.

# Developing a HTmb

Let us assume that within the accepted methodology of psychology (which was largely imported from the sciences, e.g., Rakover, 1990) it is possible to develop a theory of human consciousness, which connects consciousness to brain activity. Such a hypothetical mind-body theory (HTmb) may be expressed by the following general schematic equation:

HTmb: Consciousness (C) = f(brain’s neurophysiological activity (BNA)).

Here f represents a certain hypothetical function that connects C to BNA; but how are its variables measured? The question relates to the measurement of two variables. The BNA can be measured by the conventional units employed in the sciences, such as differences in voltage, the intensity of the electric current, or certain chemical reactions in the brain. For the sake of simplicity, I will refer to these units of measurement by the general term “conventional units” (CU).

As for the measurement of consciousness, the answer is complex. We still do not know how to directly measure a human being’s conscious experiences. While it is certainly possible to measure an individual’s motor or verbal responses to a given stimulus, no one knows how to objectively measure conscious experiences. For example, Rakover (2020) argues that it makes no sense at all to say that Jacob loved Rachel 7.5 MUlove more than he loved Leah (MUlove meaning observable measurement of units of love). However, since we hypothetically assume that C = f(BNA), it can be proposed that consciousness is measured by CU.

Since (a) there is currently no method for measuring consciousness in a way similar to measurements carried out in physics and chemistry, (b) the methodological framework, within which the above equation has been hypothetically discovered, was developed in the sciences, and (c) the equation C = f(BNA) has to fulfill the requirement for “unit-equivalency” (see below), then one may infer that consciousness is measured using CU. Put differently, given C = f(BNA), consciousness has to be expressed in units.

Note that (c), the requirement for unit equivalency, is based on the well-known method of dimensional analysis. According to this requirement, the combination of units of measurement on one side of any equation expressing a law or a theory must express the same quantity as the combination of units of measurement on the other side of the equation (see Rakover 2002, 2018). This means that the units of measurement for consciousness should be in CU, since these are the units of measurement for BNA. For example, if BNA is measured in milliamps (the measure of electrical current intensity), then consciousness also has to be expressed in milliamps. (Given the methodological framework of the sciences, even if consciousness is measured in another CU (not in milliamps), it has to be multiplied by a certain constant so that the multiplication will result in an equivalent quantity expressed by milliamps – a result that fulfills the unit-equivalency requirement.)

In view of the above, it may be concluded that consciousness can be measured as in the natural sciences, by observable, objective, and conventional units of measurement (CU). This will also include meaning and understanding, since consciousness is considered a necessary condition for these two mental properties (e.g., Rakover, 2018, 2021b). Furthermore, given the above, it is reasonable to propose that a whole technology based on HTmb could be developed, which would result in an “overt situation”, where the inner world (sensations, feelings, thoughts, intentions, etc.) of any person would be accessible to everyone.

The HTmb and the overt situation lead to several unintuitive consequences, which I shall now briefly discuss.

## Loss of individuality

 Let us suppose that in the overt situation, the privacy, individuality, and subjectivity of each person are lost. This condition could lead to one of the following two extreme consequences. First, there is the horrifying scenario in which individuals become fearful of their own thoughts and intentions, since these (whether well-meaning or malicious) would no longer be secret but publicly exposed. This might result in the avoidance of thinking and planning – a destructive condition for cultural progress.

Second, a process of adaptation might reduce the fear of the overt situation and loss of individuality, that is to say that people might somehow adjust to it. This entails that less importance would be attached to the inner world, simply because it would no longer be distinguished from the external world – it would become the domain of the public and not of the individual. As a consequence, individuals would rely less on their inner worlds (publicly exposed) to generate new creative ideas and inventions.

It seems that in both cases cultural development would be considerably impaired because a loss of individuality would reduce the importance of the inner world. It could be argued that a hidden, private inner world is a necessary condition for the development of a prosperous culture. In short, if the inner world disappeared, there would be a decline in cultural progress.

## Universal objective meaning

Before the development of the HTmb humans ascribed meaning to an indifferent world (e.g., see Rakover, 2021a). The HTmb raises the possibility that everything in the world could have an objective meaning measured by CU, which is attributed through a system of transformational laws. Does this indicate that the meaning of any phenomenon in the universe is objective and independent of human assessment? According to HTmb and its theoretical and technological developments, the answer is affirmative: a wonderful world filled with meanings just as it is permeated by other natural and objective features.

## (c) Loss of dimensionality

The above condition could lead to the tendency to mix things that belong to different dimensions or different categories. The same level of importance could be attributed to the meanings of things with completely different qualities since they would have the same CU. For example, if Smith’s love for his wife Anna amounts to 20CU and his decision to buy a secondhand car equates to 20CU, then his love for Anna equals his love for the used car.

## (d) Tmb falsification

Suppose that Mrs. Anderson loves Renaissance art and her admiration for Leonardo da Vinci’s Mona Lisa is 57.13CU. Since these units are standard, they can be translated using a series of well-known transformational formulas and compared to the measurements of other physical objects. It so happens that in a certain artists’ village near Beijing there is a modern sculpture with a value of 57.13CU. This situation poses a crucial problem: Will Mrs. Anderson’s admiration for the modern sculpture measure 57.13CU? Now let us imagine that the same Mrs. Anderson visits China to see the modern sculpture, and she promptly wrinkles her nose and exclaims, “How ugly!” In this case, the prediction arising from HTmb that Mrs. Anderson will like the modern sculpture as much as she appreciates the Mona Lisa painting (57.13CU) is not confirmed byobservation. While the theory predicts that Mrs. Anderson will *like* the modern sculpture very much, the observation reveals that she *dislikes* it very much. Thus, HTmb is refuted.

## (e) A conscious robot

Suppose that Roby the robot is constructed in such a way that it has public experiences similar to those of Mrs. Anderson: Roby the robot’s admiration of Leonardo’s painting of the Mona Lisa is 57.13CU and like Mrs. Anderson, it very much dislikes the modern sculpture in the artists’ village. Since the inner world is measured by CU, one may argue that Roby’s inner world is similar to that of Mrs. Anderson. That is, if she has consciousness (measured by CU), then Roby the robot also has this attribute (measured by CU).

It is interesting to note here that a similar conclusion has been reached by the creators of the integrated information theory (IIT) of consciousness (e.g., Tononi, 2015; Tononi, Boly, Massimini & Koch, 2016; for a review see Fallon 2019). According to IIT, consciousness is founded on the neurophysiology of the brain. On this basis, then, it may be argued that consciousness can be measured by means of standard scientific units and that it is possible to construct a mechanical system that meets all the requirements of the IIT – a device that has consciousness. This possibility conflicts with most people’s intuition and common sense. However, the response of Tononi, Boly, Massimini, and Koch (2016) is very interesting as they are willing to accept that possibility: “Intriguingly, IIT allows for certain simple systems, such as grid-like architectures, similar to topographically organized areas in the human posterior cortex, to be highly conscious even when not engaging in any intelligent behavior.” (p. 460).

## (f) A malicious use

It is not hard to imagine the following scenario resulting from technology developed on the basis of HTmb: A dictator orders certain pills to be developed that will increase or decrease consciousness, meaning, and understanding. This dictator could force his citizens to take one pill each day to increase his importance in their eyes, and a second pill to enhance their stupidity and diminish their understanding of his intentions (although these remain publicly exposed). Furthermore, with similar pills, it would be possible to develop a small number of geniuses specifically designed to fulfill the dictator’s goals, while the majority of his subjects would be required to do all the hard work for disgracefully low wages.

# Discussion

What I have described above is sufficient to show that the HTmb raises a whole host of problems that interfere with the aim of scientific research to discover Tmb, i.e., a theory of the consciousness-brain connection expressed by the equation C = f(BPA). How can we respond to the unintuitive consequences that emerge from HTmb? Here are some considerations.

First, researchers may look for flaws in the logic of the unintuitive consequences presented here. If such flaws are found, the goal of developing HTmb will be encouraged. Second, if no flaws are found to discount these strange consequences, scholars may respond by suggesting that these ramifications are essentially empirical and therefore not compelling as logical proofs. That is, these unintuitive consequences arerelated to the observable world, which is hard to predict and contains endless fascinating surprises. Thus, it can be argued that the propositions of these hypothetical consequences are not equivalent in status to mathematical or geometrical proofs, such as in Euclidean geometry, whereby the sum of the angles in a triangle must be equal to 180 degrees. It would be baffling for a researcher to empirically showthat there is a particular triangle whose angles add up to less than 180 degrees (of course, in non-Euclidean geometry, such a triangle exists). Clearly, HTmb is not similar to a law in Euclidean geometry. Therefore, it makes sense to continue working hard to discover the mechanism that links the neurophysiology of the brain with consciousness. If successful, we may worry later about the unintuitive consequences that were raised above, and any others that may emerge.

Third, researchers may suggest that research on the relationship between the neurophysiology of the brain and consciousness has reached a dead end and that it is time to look for entirely differentways to explain consciousness – perhaps by striving to discover the “hidden energy” suggested above.

In view of these different approaches, I propose that it may be useful to methodologically conceive of consciousness as a basic explanatory factor of behavior. This contradicts Kim (2002) who suggests that conscious experience is an epiphenomenon. I suggest a reversed epiphenomenalism, whereby consciousness can affect behavior and should be regarded as an explanatory concept, precisely because a satisfactory explanation for it has not been found. That is to say that a Tmb has not yet been discovered that explains consciousness in terms of its interaction with the neurophysiology of the brain.

Given the above, let us consider consciousness as an essential theoretical explanatory concept that cannot be explained by more basic concepts. This proposal requires the following clarifications. First, I do not suggest here (unlike the previous suggestion about “hidden energy”) that because there has been no explanation for the problem of consciousness it is reasonable to assume that consciousness may be considered an entirely novel force in nature. Such an assumption would create enormous confusion in the conventional infrastructure of mechanistic explanations (e.g., conservation laws would probably have to be changed) (for similar arguments see Carroll, 2016).

Second, I do not claim that consciousness is completely independent of physical brain processes. Rather, I wish to emphasize that no theory has yet been found that explains the relationship between the two. I only propose that consciousness is an explanatory but theoretical and unexplained concept.

In view of this discussion, I suggest that the fundamental qualities of consciousness are as follows:

1. Consciousness exists, to varying degrees, in every individual;

2. Only the individual is consciously aware of the content of the various representations that appear in their own mind;

3. Without consciousness, humans would function purely on a physiological level and would have a similar existence to that of a plant, or a sort of philosophical zombie (an imaginary creature devoid of all consciousness);

4. Consciousness affects one’s behavioral functioning;

5. Consciousness is influenced by physical events; for example, sensory stimuli such as light and sound elicit conscious feelings typically related to these stimuli (sight and hearing);

6. Consciousness is dependent on the normal functioning of the brain;

7. Consciousness is a necessary condition for meaning and understanding.

References

Carroll, S. M. (2016). The big picture: on the origins of life, meaning, and the universe itself. Oneworld Publications.

Grimm, S. R. (2016). How understanding people differs from understanding the natural world. *Philosophical Issues,* *26*(1), 209–225. [https://doi.org/10.1111/phis.12068](https://doi.org/10.1111/phis.12068%22%20%5Co%20%22%22%20%5Ct%20%22_blank)

Grimm, S. R. (2019). Understanding as an intellectual virtue. In H. Battaly (Ed.), *Routledge companion to virtue epistemology*. Routledge.

Fallon, F. (2019). Integrated Information Theory of Consciousness. *The Internet Encyclopedia of Philosophy*. [http://iep.utm.edu](http://iep.utm.edu/%22%20%5Co%20%22%22%20%5Ct%20%22xrefwindow)

Flanagan, O. (1992). Consciousness reconsidered. MIT Press.

Hatfield, G. (2018). René Descartes. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy*. [https://plato.stanford.edu/archives/sum2018/entries/descartes/](https://plato.stanford.edu/archives/sum2018/entries/descartes/%22%20%5Co%20%22%22%20%5Ct%20%22xrefwindow)

Kim, J. (2002). Précis of mind in a physical world. *Philosophy and Phenomenological Research,* *65*, 640–643. [https://doi.org/10.1111/j.1933-1592.2002.tb00226.x](https://doi.org/10.1111/j.1933-1592.2002.tb00226.x%22%20%5Co%20%22%22%20%5Ct%20%22_blank)

McGinn, C. (1989). Can we solve the mind-body problem? *Mind,* *98*, 349–366. [https://doi.org/10.1093/mind/XCVIII.391.349](https://doi.org/10.1093/mind/XCVIII.391.349%22%20%5Co%20%22%22%20%5Ct%20%22_blank)

Neale, J. M., & Liebert, R. M. (1986). *Science and behavior: an introduction to methods of research*. Prentice-Hall.

Rakover, S. S. (2002). Scientific rules of the game and the mind/body: A critique based on the theory of measurement. *Journal of Consciousness Studies,* 9, 52–58.

Rakover, S. S. (2018). *How to explain behavior: A critical review and new approach*. Lexington Books.

Rakover, S. S. (2021a). *Understanding human conduct: The innate and acquired meaning of life.* Lexington Books.

Rakover, S. S. (1990). *Metapsychology: Missing links in behavior, mind and science.* Paragon/Solomon.

Rakover, S. S. (2020). Why has the field of psychology not developed like the natural sciences? *Journal of Mind and Behavior,* *41*, 247–266.

Rakover, S. S. (2021b). The two factor theory of understanding (TFTU): Consciousness and procedures. *Journal of Mind and Behavior,* *42*, 347–370.

Rowlands, M. (2007). Mysterianism. In M. Velmans & S. Schnieder (Eds.), *The Blackwell Companion to Consciousness* (pp. 335–345). Blackwell Publishing. [https://doi.org/10.1002/9780470751466.ch27](https://doi.org/10.1002/9780470751466.ch27%22%20%5Co%20%22%22%20%5Ct%20%22_blank)

Tononi, G. (2015). Integrated Information Theory. *Scholarpedia,* *10*(1), 4164. [https://doi.org/10.4249/scholarpedia.4164](https://doi.org/10.4249/scholarpedia.4164%22%20%5Co%20%22%22%20%5Ct%20%22_blank)

Tononi, G., Boly, M., Massimini, M., & Koch, C. (2016). Integrated Information Theory: From Consciousness to its Physical Substrate. *Nature Reviews Neuroscience*, 17, 450–461.