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Federico Zilio

# Consciousness and World

A Neurophilosophical and Neuroethical Account

preface by  
Georg Northoff

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## PREFACE

Body and mind? From brain to mind? This is what current philosophy and neuroscience suggest. The brain will finally reveal the secrets of consciousness, which is often taken as a paradigmatic feature of the mind. Neuroscience prevails over philosophy. However, despite all real progress we made in understanding the brain in the last 20-30 years, that what the German 19<sup>th</sup> century Arthur Schopenhauer described as “world-knot”, the relationship of body/brain and mind, remains still a mystery even in the 21<sup>st</sup> century as two hundred years ago.

There is a well-defined catalogue of different problems in current analytic philosophy of mind all revolving around the relationship of brain and mind like the hard problem. While on the side of neuroscience, there are various theories about the sufficient conditions of consciousness, the neural correlates of consciousness (NCC). These problems are taken almost for granted in the discussions about consciousness and mind-brain in both philosophy and neuroscience. They seem to be “written in stone” – the questions or problems themselves are not questioned.

But are these problems and their respective approaches to mind-brain in philosophy and consciousness in neuroscience really “written in stone”? This is the moment where Federico Zilio comes in. “Wait a minute”, he says, “can we really take for granted the hard problem? The possible reduction of mind to the brain? The neural correlates of consciousness?”. His answer is clear: “No”. In the impressive second part of his book, he develops an ingenious critique of the different approaches in both philosophy and neuroscience. Having extensive historical knowledge helps him to unravel the prevalent ‘neuro-centrism’ in both philosophy and neuroscience. He comes to the rather surprising conclusion that our current concepts of brain, consciousness, and mind have their roots in pre-modernity and early modernity.

But he does not stop there. He argues that the current neurocentrism goes hand in hand with mento-centrism. Even though we continuously claim that we overcame Descartes, we are still deeply cartesian. We are still hidden dualists, at least on the level of conceivability: the dualism of mind and body/brain is still possible as otherwise there would be no need for us to formulate and raise questions like the hard problem or the neural correlates of consciousness. In short, Cartesianism permeates both current philosophy and neuroscience.

In one of the most creative and unique parts of the book, Zilio reverts to four fallacies (Part 4) that provide the basis for neurocentrism. Being in part traced to the process philosopher Alfred North Whitehead, these fallacies include ‘the myth of localization’, the ‘mereological fallacy’, the ‘fallacy of misplaced concreteness’, and the ‘naturalistic fallacy’. While on the mental side, the mento-centrism is manifest in false ‘hypostatization of psychic objects’ and the ‘confusion of actual and objectual consciousness’. Zilio is relentless: he uses his deep historical philosophical knowledge, ranging far beyond analytic philosophy, to trace the sources of both neurocentrism and mento-centrism in fallacious inferences. That sends shock waves through the whole façade of current neuroscience and philosophy – what is taken for granted and seemingly “written in stone” crumbles before our eyes.

So far, the critique. The old building, i.e., the presuppositions on which current neuroscience and philosophy rest and are based, are demolished. This provides a fresh view, nothing is written in stone. Zilio can now build a novel better building that allows connecting brain and mind in a different way. How does he do it? One pillar of his new building is phenomenology. He is a phenomenologist by heart, one can see that from the first page on. But, as that is refreshing for an outsider, he is not a dogmatic phenomenologist. He, rarely enough these days, relies on Sartre. Why? Because Sartre well developed phenomenological ontology provides a perfect steppingstone for Zilio’s enterprise, the understanding of the ontological relation of brain and mind.

Sartre’s phenomenological ontology shifts the focus on the brain and mind to the world. True, it yet only the world as we experience it in our consciousness as, after all, Sartre and Zilio too, are phenomenologists. However, Zilio goes beyond the world as we experience in consciousness. The world of our experience must pre-



suppose some construction or constitution process that occurs prior to and independent of consciousness. Hence, unlike many phenomenologists in past and present times, Zilio is not afraid of literally looking beyond the phenomenological and existential boundaries. And what he sees there is the world, the world prior to and independent of consciousness. This makes possible his shift from phenomenological ontology to ontology.

How now is the world related to the mind? Being open to the empirical discoveries, he, beyond the phenomenological and existential boundaries, sees a brain that is always already embedded and integrated within the world through its relation to body and environment – he speaks of ‘environment-body-brain relation’ that is a specification of what I described as ‘world-brain relation’. He then, ingeniously, probes the conceptual and empirical validity of such environment-body-brain relation. He discusses its conceptual meaning emphasizing and well aware of whole-part relation that it is the brain that is contained and nested within body and world – this avoids the mereological fallacy of Bennett and Hacker as well as the other fallacies he diagnosed.

Even more interesting, he also validates the environment-body-brain relation in empirical terms. He cites and discusses highly unique cases of locked-in syndrome where subjects cannot move but still are fully conscious of themselves and the world. He makes the point that these subjects are still connected to the world and their body even though their motor functions are completely depleted. The fact that consciousness is still present in these cases strongly supports his idea that consciousness can neither be localized and place in the brain (as in neuroscience), body (as in embodied approaches), or in the world (as in panpsychism) alone. Instead, consciousness must be traced to a relation, the relation of environment, body, and brain – consciousness is not an ontological entity but an ontological relation.

Our relationship with the world is the key to consciousness and mental features. That very same relationship is first and foremost constituted by our brain that enables us to, for instance, synchronize with other, music, and the environment in general. The better the brain is integrated and linked with body and environment through its temporo-spatial dynamics, the better we can synchronize with others and the environment, and the more likely we will de-

velop consciousness such that we can experience ourselves as part of the world. And even dreams and hallucination, as Zilio tells us at the end, only support such relational and neuro-ecological view of consciousness and the mind in general. This comes full circle as the title of his book his “consciousness and world”.

Zilio highlights the importance of the world. For both neuroscience and philosophy. In our focus on the brain, body and mind, we tend to easily forget the world. We “take it for granted” that the world is present and quasi “given”. That can probably be traced to the sensory-empirical accounts of mind in earlier times which have been described as ‘myth of the given’ in our times by Sellars and McDowell. Zilio does not fall for the ‘myth of the given’. The world is not given and cannot be taken for granted. Instead, the world needs to be related to us as an organism and for the constitution of that relation, the brain is key. If our brain can no longer establish and constitute that relation, we lose consciousness. Our brain and consequently consciousness are not simply neuronal but neuro-ecological; only when the brain is purely neuronal, we have no longer consciousness.

“Nothing special here”, the traditional analytic philosopher of mind may want to argue, “that is nothing but panpsychism”. Zilio can defend himself well against this claim. To argue that his position amounts to panpsychism is to neglect that the world itself does not constitute consciousness or other mental features. Instead, one must take into view the relation of the world to body and brain, the environment-body-brain relation. It is the relationship itself that is key, not some property or other feature in the world itself independent of brain and body. That provides a future task for Zilio: he needs to develop a truly relational ontology where the relation is at least co-occurrent with properties. As I see that is the only way to escape all the kind of fallacies including both neuro- and mento-centrism, Zilio spells out so nicely. And that, as he demonstrates, is strongly supported by the empirical data.

What can we take home from this book? First and foremost, it is “fresh air” in the often repetitive and almost circular debates about mind-brain in current philosophy. It widens the scope beyond analytic philosophy by placing the current questions in a larger historical context. That, as we all know, makes us see things we otherwise would not see. As spelled out above, this leads to fascinating novel

insights showing that we need to consider the world in our view of the brain-mind relationship, the mind-body problem resurfaces as a world-mind problem (McDowell) and ultimately as a world-brain problem.

Finally, Zilio extends the intra-disciplinary boundaries of philosophy to the empirical world of neuroscience without succumbing the former to the latter. He distances himself well from the reductive neurophilosophy that is prevalent in the Anglo-American world. Instead, he practices a truly non-reductive approach. Many critics and traditional philosophers say of neurophilosophy that it is circular, meaning it ends up at that what is already presupposed. Zilio beautifully demonstrates that that is not the case: he presupposes consciousness but ends up with the world prior to and independent of consciousness. If that is circularity, then I must ask for the meaning of the term.

He, as I see it, replaces methodological circularity by methodological iterativity; this allows us to take a look into the deeper presuppositions of the phenomena at the surface like consciousness. That, at least in the European-continental tradition, is philosophy as its best – Zilio nicely demonstrates and, even more important, practices that non-reductive neurophilosophy follows that tradition. Therefore, and again his book demonstrates that neurophilosophy can make novel and innovative contributions to philosophy – he introduces the world to the mind-body problem which thereby is transformed into a world-mind and ultimately world-brain problem (or environment-body-brain problem, as he would say).

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## SUMMARY

The main subject of this book is the relationship of consciousness with the world. Consciousness is both extremely familiar and mysterious at the same time, and it is considered one of the most complex phenomena to describe and explain. Recently, cognitive science and neuroscience have assumed a significant role in the search for the fundamental structures of consciousness, investigating the neuronal basis that allows the emergence of our experience. For this reason, the present work deals not only with philosophical and phenomenological analysis but also with the latest results of neuroscience on the relationship between consciousness and brain.

The first chapter outlines the main theoretical and ethical topics of contemporary consciousness studies (first-, second-, and third-person perspective, the nature of qualia, phenomenal contents, the hard problem and the meta-problem of consciousness, disorders of consciousness, consciousness and personhood, etc.). After presenting a provisional model for the phenomenological structure of consciousness (based on Sartre) – represented by intentionality, phenomenality, and self-awareness – and discussing the ethical value of conscious and unconscious actions (Chapter 2), I will critically discuss reductive approaches that are influential in both neuroscience and philosophy of mind. Some of them argue the possibility to reduce experience, conceptually and ontologically, to the brain activity (neuro-centrism; Chapter 3), while others hypostatise various mental states within the mind/brain (mento-centrism; Chapter 4).

In this regard, it is possible to identify a common paradigm, that is, the distinction between reality and appearance that emerged especially during modern philosophy and after the modern scientific revolution. That has led to the reduction of experience to a mind- or brain-related quality/property, as we can see nowadays (Chapter 4). Given the perspectival, multifaceted structure of experience and following the analysis of several non-reductive approaches, I will

argue for an ontologically and epistemologically pluralist account of consciousness that can be developed only through an interdisciplinary approach, combining philosophy, phenomenology, and neuroscience.

This will allow me to address the issue of consciousness from within the so-called non-reductive neurophilosophical approach, in which I will analyse the way we experience the world from both a phenomenological and a neuroscientific perspective. Drawing on Sartre's phenomenological analyses of consciousness in relation to world and body, I argue that experience is not given without the embodied-being-in-the-world condition (Chapter 5), a condition that will then be connected to the neuroscientific concept of environment-body-brain alignment (adapted from Northoff's world-brain relation), that is, a necessary predisposition for the maintenance of consciousness (Chapter 6). In conclusion, the concept of consciousness-in-the-world will be tested through neurophilosophical experiments regarding the locked-in syndrome and the dreaming state, suggesting the need to reconsider consciousness not merely in terms of a brain- or mind-relation but as intrinsically world-related.

## INTRODUCTION

Here was just the thing [Sartre] had been longing to achieve for years – to describe objects just as he saw and touched them, and extract philosophy from the process.

SIMONE DE BEAUVOIR, 1965, p. 135

I am sitting in front of my desk as I type these letters on my laptop, my fingers zip around on the keyboard as I watch the words appearing on the screen but at the same time I reflect on myself reading the very same words – it is a strange sensation. The lava lamp (so vintage) dimly illuminates the pages of a book on my left, from time to time my gaze is captured by the slow movement of the coloured bubbles inside. I unknowingly move my hand towards the cup of tea to my right, but my eyes are so focused on this paragraph that a finger sticks on the needle of the succulent plant that decorates the desk (it looks very bad, I do not have a green thumb). I immediately withdraw the hand in pain and take off the headphones that produced strange ambient sounds and whispers, just as the annoying buzz of a mosquito shows up behind me. Well, it would be easier to write if I were not constantly wrapped and immersed in a world around me while I do it. But this is the condition that determines our experience, that is, to be in the world. A long list of issues and themes emerges from this apparently banal paragraph: intentionality, bodily awareness, self-consciousness, unconscious perception, pain-consciousness, phenomenality, and so forth. Another equally long list of questions emerges, which the present study seeks to understand. What is consciousness? How does it “work”? What are the conditions of possibility of consciousness? Am I always conscious of the environment? Where is my body when I am immersed in some specific task? What does it feel like sitting on this desk writing on the computer? What happens to my body and my brain while I do it? What relationship does my body have with the world? How does the world look full of meanings to me? Paraphrasing the words of Aron

to Sartre in 1932<sup>1</sup>: if you are a phenomenologist, you can talk about this paragraph and make philosophy out of it!

The present research aims to investigate the problems of consciousness, with a focus on how we – as conscious subjects – are related to the world. I say “problems” because consciousness is not a unitary and solid philosophical problem, rather it presents several issues from different perspectives, all of them linked together. It is indeed the most pervasive phenomenon we share and, at the same time one of the most evanescent to explain, so elusive as to be difficult to describe by rigorous scientific approaches. The main theme addressed here will be the potential relations that consciousness can maintain with the objects of the environment and with (and through) our body – in a nutshell, with the world. As I figuratively showed in the previous paragraph, our experience never seems to be made of brief flashes of consciousness at specific space-time points, rather it seems to be a fluid and total immersion in a world made of objects and backgrounds, meanings and references, actions and perceptions. Thus, it seems impossible to examine the phenomenon of consciousness without questioning how we engage the world we live in.

The relationship between consciousness and world is one of the most important issues of classical and contemporary phenomenology, and it will be, at the same time, the starting point and the main topic of this research. However, this will not be developed solely from a philosophical or phenomenological point of view but will also be supported by a neuroscientific perspective. Since recent decades, in fact, consciousness cannot be defined anymore as the exclusive domain of phenomenology or philosophy of mind, given that several scientific articles on the neural correlates of consciousness have been published to explain the relationship between brain

<sup>1</sup> “We spent an evening together at the Bec de Gaz in the Rue Montparnasse. We ordered the speciality of the house, apricot cocktails; Aron said, pointing to his glass, ‘You see, my dear fellow, if you are a phenomenologist, you can talk about this cocktail and make philosophy out of it!’ Sartre turned pale with emotion at this. Here was just the thing he had been longing to achieve for years – to describe objects just as he saw and touched them, and extract philosophy from the process. Aron convinced him that phenomenology exactly fitted in with his special preoccupations: by-passing the antithesis of idealism and realism, affirming simultaneously both the supremacy of consciousness and the reality of the visible world as it appears to our senses” (De Beauvoir, 1965, p. 135).



activity and our own mental life, especially our conscious experience. For this reason, if the purpose here is to investigate the current state of consciousness studies, critically analysing them in terms of the consciousness-world relationship and offering an original perspective on this, then it is not possible to ignore recent neuroscientific developments. It would be like presuming to talk about life while completely ignoring biological studies. In this sense, the present work aims to address the issue of consciousness through a mainly philosophical approach, but which is able at the same time to establish links on an interdisciplinary level with the results of neuroscientific research. Thus, the epistemological and methodological goal is to present an interdisciplinary approach towards experience, which can consequently offer an ontologically pluralistic account of consciousness.

The first chapter, “The Problems of Consciousness”, highlights the complexity of the issue of consciousness. The concept of consciousness is here examined in terms of its possible meanings, from different methods and perspective, exposing the main philosophical positions. This immediately raises the epistemological question about the perspective we take on consciousness, which cannot only be an objectifying one, i.e. in the third person, but needs to also include the first- and second-person perspectives. There is also a large section dedicated to perhaps the most famous philosophical issue regarding consciousness, that is, Chalmers’ “hard problem”, arguing for the irreducibility of experience to the physicalist and materialist paradigms of contemporary science. This will lead me to discuss several collateral issues that addresses consciousness from both ontological and epistemological perspectives, for example, the explanatory gap, the what-it-is-likeness of experience and the nature of qualia. The examination of these points will help me to outline what I define as the “specificity” of consciousness, that is, the ontological incommensurability that we usually report about consciousness with respect to all the other phenomena in the world, and that Chalmers has recently defined as the meta-problem of consciousness. This new kind of metaphysical problem offers the opportunity to outline the two main philosophical positions concerning consciousness, namely realism and illusionism. The last part of the chapter is dedicated to the neuroethics of disorders of consciousness.

After a general introduction to the problems of conscious-

ness, the second chapter, “The Phenomenological Structure of Consciousness”, starts with an attempt to identify a provisional blueprint of consciousness. In the midst of so much critical literature about the problems of consciousness, I will try to start the analysis of the phenomenon of consciousness from a phenomenological perspective. In this regard, I will try to determine the phenomenological structure of our experience, focusing on the issue of pre-reflective consciousness, developing a fruitful dialogue with various contributions from phenomenology (Sartre, Gallagher, Zahavi), and delineating some preliminary features, like phenomenality, intentionality, and self-awareness. Then, I will deepen the analysis of these elements, by relying on Sartre’s interpretation, which allows investigating the phenomenological characteristics of consciousness, avoiding any excessive metaphysical commitments. To ensure greater conceptual clarity, I will also build a bridge between Sartre’s phenomenology and some contemporary philosophical positions about consciousness, such as intentionalism, representationalism, disjunctivism, and adverbialism. Finally, the features of consciousness will be tested in the last part of the chapter through certain thought-experiments and non-thought-experiments on the possibility of unconscious experiences (refrigerator light problem, long-distance truck driver, blind-sight), and the ethical and neuroethical relevance of the so-called cognitive unconscious.

After providing a provisional definition and phenomenological structure to the concept of consciousness, we are still left with several questions about consciousness at both the philosophical and the scientific levels. In the third chapter, “Neuroscience of Consciousness and Neuro-centrism”, I will look into the contemporary scientific context, and more specifically into the neuroscientific studies on consciousness. If the purpose of neuroscience is to explain consciousness, we must discuss what science – and, in particular, neuroscience – of consciousness would be. A scientific account, in a very general way, should offer a theory that could explain, describe, and predict the phenomenon of consciousness in all its features. In other words, the theory must define what consciousness is (description), how it comes into existence (explanation), and what its functions are (functionality). In this regard, I present and discuss various approaches and operationalisations in neuroscience (brain-based, mind-based, brain-reductive, mind-reductive), in particular,

the typical method of description of consciousness in terms of “contents” and “levels”. Then I critically examine the core theme of the neurosciences of consciousness, that is, the search for the so-called neural correlates of consciousness (NCC), which is often considered the holy grail that will reveal to us all the secrets of experience. More generally, most contemporary scientific research on consciousness maintains that consciousness can now be explained through all the new methods of neuroimaging and that, in this way, a complete description of the experience can be reduced to the mechanisms of the brain. This kind of attitude – neuro-centrism – is based on the idea that our personality, our mental life, our consciousness itself are all products of, or equivalent to, our brain activity. This “brainhood” paradigm finds its roots in the modern scientific revolution and modern philosophy. Then, I will delineate a historical-epistemological analysis of the brainhood paradigm, trying to establish a comparison between, on the one hand, Galilei and Descartes and, on the other hand, the contemporary reductionist and eliminativist approaches to consciousness.

In the fourth chapter, entitled “The Appearance-Reality Fallacy. The root of contemporary studies of consciousness”, I proceed with the analysis of the cultural, epistemological, and ontological basis of contemporary research on consciousness, including not only empirical studies but also analytical studies from the philosophy of mind. It is my thesis that Cartesianism is diffusely present in contemporary cognitive sciences and also that the modern dichotomy between primary and secondary qualities, first proposed by Galilei, continues to exercise a considerable influence even today. This is the background against which the Appearance-Reality Fallacy takes shape, that is the epistemological and ontological error of separating both the world and also consciousness into two realms, the apparent/superficial one and the real/deep one, as if the laptop in front of me right now were just the appearance of a truer reality beyond it, like a thing-in-itself. This fallacy is present in both neuroscience and philosophy of mind and I will present a series of problems in both neuro-centrism (the myth of localisation, the mereological fallacy, the fallacy of misplaced concreteness) and mento-centrism (Sartre’s critique of mentalism, i.e. hypostatisation of psychic objects), in order to avoid the immediate objectification of experience in both the neuronal and the mental sense. On the basis of the analysis prepared in the first chapter,

I will distinguish between actual and objectual consciousness, identifying the subject of the subsequent phenomenological analysis with the intrinsic and unavoidable perspectivalness of the actual consciousness. Many of the contemporary studies on consciousness, instead, are focused on how consciousness is objectified by means of neuronal correlation or philosophical concepts (representations, qualia, self, etc.). This will lead me to propose some ways to escape from reductionist naturalisms or irreconcilable dualisms, towards an alternative approach based on ontological pluralism and interdisciplinary epistemology. In this regard, I present a pluralist and interdisciplinary method of analysis that considers various dimensions of our experience, physical, phenomenal, psychological, etc., and that consequently needs the contribution of many disciplines.

While in Chapter 4 I simply suggest a new interdisciplinary and pluralist approach on the basis of the problems and criticisms of the mentalist and neuro-centric paradigms, in Chapter 5, “Embodied-Being-in-the-World as the Phenomenological Predisposition for Consciousness”, I propose an alternative perspective mainly grounded on Sartre’s phenomenological ontology. First, I argue for a fruitful interconnection between phenomenology, philosophy, and neuroscience, presenting different types of non-reductive approaches (neurophenomenology, non-reductive neurophilosophy, neuropragmatism, 4E cognition). Secondly, regarding the concept of consciousness as such, I focus on the lived experience as the starting point and, at the same time, the presupposition of every other experience (introspection, empirical analysis, conceptualisation, etc.). In this sense, the provisional features I introduced in the second chapter will here be presented into the context of consciousness as being-in-the-world, which serves as a predisposition for intentionality, phenomenality and self-awareness. My purpose is to propose a non-mentalistic and non-reductionist account of experience that will then be developed in Chapter 6 through a neurophilosophical approach. Then, from the phenomenological perspective, I will present a detailed account of the predisposition of consciousness understood as embodied-being-in-the-world. The aim is to give bones, flesh, and tendons to this interdisciplinary theory, focusing on the relation between the body and the world. I will rely on Sartre’s early phenomenological studies, in particular, to re-evaluate his complex analysis of embodiment, often unfairly overshadowed by the studies on Husserl and Merleau-Ponty.

Here I will analyse bodily consciousness as intrinsically situated and connected with the world, through a body that is often “surpassed” and “passed by in silence”, to use Sartre’s words. In order to build a bridge with contemporary studies of consciousness and the body, I will compare Sartre’s phenomenological analysis with the key concepts of 4E Cognition (embodied, embedded, enacted, extended). This will also lead me to consider the possibility that, in order to understand how we exist in our body, we need to understand first how we exist in the world, seeking a new paradigm for the study of consciousness that is not founded either on the brain or on the body alone, but on our relationship with the world. This relationship can be called “embodied-being-in-the-world” and I will outline and discuss it, highlighting its characteristics in relation to how we experience the world spatiotemporally.

This long itinerary finds its final synthesis in the last Chapter 6, “The Environment-Body-Brain Alignment. A Neurophilosophical and Neuroethical Account”, where, in order to be faithful to my interdisciplinary project, I will analyse consciousness from a neurophilosophical point of view. On the basis of the phenomenological investigation pursued in the previous chapter, I will critically discuss how the consciousness-world connection is conceived by some of the most relevant neuroscientific theories of consciousness (Integrated Information Theory, Global Neuronal Workspace Theory, Temporo-spatial Theory of Consciousness), subsequently relating the embodied-being-in-the-world condition to the concept of “world-brain relation” proposed by Georg Northoff, neuropsychiatrist and neurophilosopher. Here I will examine Northoff’s theory and give an account of what I call the environment-body-brain alignment as the empirical description of the ontological concept of the world-brain relation, and also as a necessary predisposition for the maintenance of consciousness. This will involve a final test for the theory proposed, at both a phenomenological and a neuroscientific level, a sort of *experimentum crucis* that can help us to understand if I can really provide a description of the predisposition of our experience as embodied-being-in-the-world and environment-body-brain alignment. Hence I will propose two cases in which consciousness seems to exist in the absence of any relationship with the body and the environment, namely the locked-in syndrome, a rare and severe clinical condition, and the dreaming state interpreted as a case of

“disconnected consciousness”. These paradigmatic cases can offer us an empirical, phenomenological, and conceptual test to the theory presented in this research. This neurophilosophical and neurophenomenological account of experience that is based, above all, on the concept of “being in connection with the surrounding world” as I described it at the beginning of this introduction. This concept of consciousness-in-the-world will suggest the need to reconsider consciousness not merely in terms of the brain- or mind-relation, but as intrinsically world-related.

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