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HOW COULD HUSSERL'S THEORY OF THE BODILY SELF-CONSTITUTION OF THE EGO HELP BRIDGE THE EXPLANATORY GAP?*

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The explanatory gap—the apparently ineliminable chasm between physical, bodily processes and states on the one hand, and subjective, lived experience on the other—belongs among the greatest problems of contemporary philosophy of mind and empirical research concerning consciousness. According to some scholars—such as eliminativist philosophers like Paul and Patricia Churchland—it is a pseudo-question. However, in our interpretation, an accurate phenomenological reflection on one's own consciousness convinces the attentive and careful philosopher that it is very much a real question—and in fact a crucial one. The present paper endeavours to show how Husserl's theory of the bodily self-constitution of the ego could help us, not to close the explanatory gap in a reductionist manner, but rather to bridge this gap by rendering apparent the necessary connection between the subjective, phenomenal side of experience and its bodily basis. In this interpretation, Husserl's conception of embodiment could even provide a more rigorous and firmer theoretical foundation than any which currently undergirds empirically related research regarding the origins of consciousness in the natural world. In the first half of the study, I outline Todd Feinberg and Jon Mallatt's attempt to bridge and, in a further step, to eliminate the explanatory gap, in which they proceed from the external world to the interiority of mind. The second part of the paper presents a phenomenological analysis that aims to demonstrate that a Husserlian attempt would follow the opposite direction: from the inside proceeding outwards towards the external, physical reality.

Keywords: explanatory gap, embodiment, philosophy of mind, Edmund Husserl, self-constitution, transcendental and empirical ego, hard problem of consciousness.

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КАК ГУССЕРЛЕВСКАЯ ТЕОРИЯ ТЕЛЕСНОГО САМОКОНСТИТУИРОВАНИЯ ЕГО МОЖЕТ ПОМОЧЬ ПРЕОДОЛЕТЬ РАЗРЫВ В ОБЪЯСНЕНИИ?*

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Разрыв в объяснении — кажущаяся непреодолимой пропасть между физическими, телесными процессами и состояниями, с одной стороны, и субъективным, переживаемым опытом, с другой — принадлежит к величайшим проблемам современной философии сознания и посвященных сознанию эмпирических исследований. Согласно некоторым исследователям — таким, как элиминативистски настроенные философы Пол и Патрисия Черчланд — это псевдопроблема. Однако, с нашей точки зрения, строгая феноменологическая рефлексия на собственное сознание убеждает внимательного и осмотрительного философа в том, что этот вопрос является более чем реальным и фактически решающим. В настоящей статье предпринята попытка показать, что гуссерлевская теория телесного самоконституирования его, вместо того чтобы устранять разрыв в объяснении на редукционистский манер, может, скорее, помочь нам перебросить через него мост, выявляя необходимую связь между субъективной, феноменальной стороной опыта и его телесным базисом. Согласно такой интерпретации, гуссерлевская концепция телесности может даже служить более строгим и прочным теоретическим основанием исследования сознания, нежели любое из тех, которые в настоящее время лежат в основе эмпирических исследований истоков сознания в природном мире. В первой части своего исследования я очерчиваю попытку Тодда Файнберга и Джона Маллата преодолеть и, вслед за тем, устранить разрыв в объяснении, в ходе которой они движутся от внешнего мира к внутренней сфере сознания. Во второй части статьи представлен феноменологический анализ, который призван показать, что гуссерлевское решение этой проблемы подразумевает движение в противоположном направлении — от внутренней сферы сознания вовне, к внешней, физической реальности.

Ключевые слова: разрыв в объяснении, телесность, философия сознания, Эдмунд Гуссерль, самоконституирование, трансцендентальное и эмпирическое его, трудная проблема сознания.

1. INTRODUCTION

This study explores the intersection of contemporary philosophy of mind and phenomenology by asking how the so-called “explanatory gap” can be handled by Husserl’s theory concerning the bodily self-constitution of the transcendental ego.

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The core of the problem, labelled with the term “explanatory gap,” is that the specific qualitative character of subjective experience is apparently completely independent from the characteristics of physical states and processes, and we are seemingly entirely incapable of deriving the former from the latter. In its modern form¹, this problem dates back at least to Charles Dunbar Broad, who wrote the following in 1925:

He [the archangel] would know exactly what the microscopic structure of ammonia must be; but he would be totally unable to predict that a substance with this structure must smell as ammonia does when it gets into the human nose. The utmost that he could predict on this subject would be that certain changes would take place in the mucous membrane, the olfactory nerves and so on. But he could not possibly know that these changes would be accompanied by the appearance of a smell in general or of the peculiar smell of ammonia in particular, unless someone told him so or he had smelled it for himself. (Broad, 1925, 71)

In the more recent discourse of analytic philosophy of mind, we can find a related articulation of the problem in Thomas Nagel’s famous 1974 article, “What Is It Like to Be a Bat?,” then later and more explicitly in the work of Joseph Levine, who introduced the term in 1983 in his article “Materialism and Qualia: The Explanatory Gap.” After such initial formulations, the explanatory gap increasingly became a focal topic for philosophy of mind and consciousness studies. It was treated by scholars such as McGinn (1989), Dennett (1991), Chalmers (1995, 1996), Varela (1996), and Thompson (2007, 253-266), and more recently by Feinberg and Mallatt (2018, 2019, 2020) and many others. This article proposes a possible way to handle the “hard problem of consciousness” (Chalmers, 1995)², that is, the difficulty implied by the explanatory gap, in a rigorously phenomenological manner, guided by Husserl’s theory of the bodily self-constitution of the ego.

This article presents three different strategies to bridge the explanatory gap. The first departs from the outside and proceeds inwardly. The analysis of Todd Feinberg and Jon Mallatt could be characterized as an example of this approach (2018, 2019, 2020). They posit the existence of a particular causal chain which individualizes a conscious experience as a unique neurobiological phenomenon, and ultimately, this peculiar caus-

¹ In my interpretation, this idea could already be identified in Descartes’ conceivability argument, according to which we could and should conceive of mind and body as completely independent entities. In other words, in Descartes’ view, mind and body, spirit and matter appear to the reason as two completely independent realities with entirely different natures.

² According to Chalmers’ distinction, the “hard problem of consciousness” relates to the question how brain processes at all lead to consciousness, and the ‘easy problems’ on the other hand concern the correlation of specific mental processes and their underlying physical, functional processes (such as attention, memory, listening, perceptual discrimination etc.).

al process is responsible for the unique phenomenal features of a subjective event (i.e. for the particularities of “how it feels”). We can also associate with this “external way” of explanation the approach of Alva Noë and Susan Hurley (2003), who made a distinction between a “comparative” and an “absolute” explanatory gap. Thus, by setting aside the “absolute” explanatory gap (i.e. why does a particular brain process “have *any* qualitative expression at all”), they are able to claim that the “comparative” explanatory gap (i.e. why does a particular cerebral process “have *this* qualitative expression rather than *that one*”) is explainable in *causal terms* for the most part.

The second strategy is exemplified by the overall position of the branch of phenomenology that deals with embodied cognition, and by neurophenomenology in particular (Fuchs, 2018, 2020; Thompson, 2007; Varela, 1996; Varela, Thompson & Rosch, 1991; Yoshimi, 2014). According to embodied cognitivists, the physical and subjective sides of experience have an essentially *circular* relationship³. In their opinion, the explanatory gap as such *cannot be eliminated*, although our scientific duty in regard to it is quite different. Instead of erasing it in a reductionist manner, we should rather make this gap scientifically *fruitful*, meaning that we ought to analyse rather the *isomorphic features* and circular interconnections between these two sides of conscious experience. In Evan Thompson’s words:

The dynamic sensorimotor approach is best understood not as an attempt to close the comparative explanatory gaps in a reductionist sense, but instead as an attempt to bridge these gaps by deploying new theoretical resources for understanding perceptual experience and neural processes in a coherent and overarching sensorimotor framework. (Thompson, 2007, 257)⁴

³ In this context, we should remark that circularity and circular connections are also very important for Feinberg and Mallatt (2020, 3, 8).

⁴ The strategy and aim of the phenomenological current of embodied cognition are twofold. On the one hand, these scholars want to avoid reductionism; on the other, they strive after a monist description of the world—consciousness relationship. They believe that “mind and world” are “mutually overlapping” (Varela, 1996, 346), although they also want to conceive of and describe this “overlapping” in non-reductionist terms. These doubly directed efforts are nicely characterized and summarized by the following words of Evan Thompson: “I have argued that the standard formulation of the hard problem is embedded in the Cartesian framework of the ‘mental’ versus the ‘physical’ and that this framework should be given up in favor of an approach centered on the notion of life or living being. Although the explanatory gap does not go away when we adopt this approach, it does take on a different character. The guiding issue is no longer the contrived one of whether a subjectivist concept of consciousness can be derived from an objectivist concept of the body. Rather, the guiding issue is to understand the emergence of living subjectivity from living being, where living being is understood as already possessed of an interiority that escapes the objectivist picture of nature. It is this issue of emergence that we need to address, not the Cartesian version of the hard problem” (Thompson, 2007, 236).

Finally, there is a third strategy, to which we will dedicate the last and longest part of our study, which we term the *Husserlian way*. It departs from the *immanent sphere of subjective experience* (i.e. the “inside” of consciousness)⁵. According to Husserl, the concrete form of subjective experience is characterized entirely by *embodiment* (cf. Husserl, 1960, 1989a, 1997). He further posited that a phenomenological analysis of subjective experience—one which is attentive and careful enough—can identify *a priori indications* of this experience that point toward the transcendent, physical, and “external” aspects of reality. More specifically, in his view, *the particular phenomenal features of each lived experience*—and therefore, *not those features* which intentionally relate us to transcendent objects and facts in the world (e.g. the visual experience of a chair)—contain indications of the body and certain bodily functions.

Husserl held that the *self-constitution* and bodily functioning of the ego has certain *a priori necessary* and also *some contingent features* (cf. Yoshimi, 2010)⁶. In our

⁵ In this context we should refer to an important distinction by Husserl between “real” (“*reell*”) immanence and the “real” (“*real*”) content of conscious, subjective experiences, which was a crucial motif in his *The Idea of Phenomenology* (Husserl, 1999, 62–64). The first refers to the real or true (“*reell*”) immanence of a transcendently reduced consciousness, the second (“*real*”) to the consciousness as part of the natural world, as a *constituted psychological reality*. In this present article, at the deepest level, as the ultimate point of departure of the self-constitution of the ego, we are having in mind the first, more radical meaning of “immanence,” or “inside” of the consciousness, as transcendental consciousness.

⁶ At this point we should emphasize Husserl’s strong anti-naturalistic commitment, the fact that in his opinion—after his so-called ‘transcendental turn’ around 1906/1907 (Husserl, 2008b)—philosophy must take a strongly anti-naturalistic stance, and naturalistic conception of philosophy and science is fundamentally mistaken. Husserl’s anti-naturalism does not mean that in his view natural sciences would be erroneous. That would obviously be an utterly delusional idea. By naturalism, Husserl means the conception that nature would be the only reality and ontological dimension, that everything that exists would be only natural and nothing else, and thus the only legitimate way of approach of reality and things in the world (including humans) would be the way of natural sciences. Husserl goes as far as to say, that in his opinion, naturalism would inevitably lead global humanity to a civilizational catastrophe (Husserl, 1970, 299). He was of the opinion that transcendental consciousness and transcendental ego were not part of this world, we can also say, that we believed that these were something absolutely “otherworldly.” He criticized Descartes’ conception of ego as “*res cogitans*,” because—Husserl thought—in Descartes’ interpretation the ego was “a little *tag-end* (*Endchen*) of the world” (Husserl, 1960, 24). These considerations had also enormous consequences on Husserl’s *theory of the self-constitution of the transcendental ego in the form of an empirical ego*.

Husserl’s own conception of the self-constitution of the ego has an inherently idealistic character in accordance with his reinterpretation of phenomenology around 1906/07 as *transcendental idealism*. However, the idea of the self-constitution need not necessarily be an idealistic theory.

There are at least three main possible way to interpret this conception. 1) Firstly, there is a strongly idealist and metaphysical interpretation. The transcendental ego *creates* itself in the form of an empirical ego—very similar to Plotinus’ idea of the emanation of reality from the One. As if flesh and bone would grow around the transcendental ego in a very literal sense. This idea would demand a

opinion, in the light of developments in phenomenology, philosophy of mind and neurology over the last one hundred years, we can modify Husserl's view so as to rephrase it in a much stricter way. In this regard, we believe that a slight modification of Husserl's conception of the necessary embodiment of the ego and its subjective experience serves as a theoretical foundation for what we might call the "Embodied Manifestation Thesis," according to which *every conscious experience and capability refers to a physical, bodily basis as its carrier and realizer*. Thus, the ego and its experiences are *manifested* in a necessarily embodied manner⁷.

strong metaphysical interpretation of the constitution. We can find the seeds of such an interpretation in Eugen Fink (Fink, 1966, 130–133; cf. Tengelyi, 2007, 112–113). Now we can find such a metaphysically strongly committed interpretation of transcendental idealism and constitution in Arthur David Smith (2003), and Dermot Moran's own interpretation of Husserl is at least open to this direction (Moran, 2003, 2005, 2021). 2) The second could be labelled as a sort of "*transcendental parallelism*." This means that the transcendental domain is not a completely independent, we can also say "supernatural," realm that shapes and creates the natural world "from the above," in a literal and metaphysical sense, but that subjective processes (like meaning-bestowal of things) necessarily have a transcendental aspect, which is not entirely independent from physical reality. It is a rather *Kantian model*, according to which, man is a citizen of two worlds. Robert Sokolowski has a good illustration of this model (Sokolowski, 2000, 118–119). According to this, we should have in mind the example of a *chess figure*, such as a rook. On the one hand, a rook is an empirical entity. Fire could burn it, it is a subject to gravity, so it can fall from the table etc. On the other hand, it is an *agent of a game*. As an agent of a game, it cannot be burnt or fall from the table, but one can checkmate with it the opponent's king. Similarly, says Sokolowski, a man is an empirical being on the one hand, but, on the other, she's an agent of truth and logic, and is a *subject of the laws of rationality, logic, and truth*. Tengelyi has a similar interpretation of Husserl (2014, 200–213, 411–433), and—in my opinion—also Klaus Held (1966). According to this second approach, subjectivity always involves disclosing the world and subject in it in certain ways, and this process of disclosing also always has certain *a priori* laws. 3) Finally, there is the attempt to *naturalize phenomenology* (Petitot et al., 1999). According to this current, we can use phenomenology as a methodologically elaborate discipline to study first-person subjective experiences in natural scientific research on consciousness. Representatives of this stance do not endorse—or do not endorse whole-heartedly—Husserl's anti-naturalistic position. They emphasize that consciousness is not something otherworldly or supernatural, but something inherently embodied, where embodiment also means *physical* embodiment, (so, not just the *experience* of having a body). They also emphasize that there are circular connections between the subjective and objective (physical, bodily) side of the experience (Thompson, 2007; Fuchs, 2018, 2020). They attempt to bring mind and world into *complete "overlap"*, but in a non-reductionist, non-eliminativist manner, although, they certainly do not endorse the idea of an otherworldly, creating transcendental subjectivity.

Of these three models, we would like to ally ourselves with the second—that is to say, we endorse a stronger interpretation of transcendental subjectivity, but also like to emphasize the importance of application of the phenomenological method in empirically oriented consciousness studies.

⁷ This view, the "Embodied Manifestation Thesis," does not lead to determinism, of course. It leaves space for top-down causation, for the view that the subjective agent as a whole can autonomously determine herself. In other words, it leaves room for free choice.

In other words, Husserl's theory of embodiment offers us a way to bridge the explanatory gap starting with conscious immanence, highlighting the necessary embodied features of subjective experience, and proceeding towards the external bodily and physical aspects of reality, following Husserl's notions of constitution and self-constitution. This represents an inside—outwards bridging strategy for the explanatory gap.

We articulate our study in the following four sections: 2. Causal and External Strategies: Starting with Physical Reality; 3. Making the Explanatory Gap Fruitful: The Standpoint of Embodied Cognition; 4. A Husserlian Stance concerning the Explanatory Gap: Proceeding from Immanence Towards Transcendence; and 5. Conclusion.

2. CAUSAL AND EXTERNAL STRATEGIES: STARTING WITH PHYSICAL REALITY

This section examines certain characteristic examples of a concept that we could call the “external approach” to the explanatory gap, a concept which starts with the natural scientific attitude and external physical reality as a point of departure and attempts to arrive at the internality or immanence of subjective experience from that orientation. Proponents of this approach believe that *an adequate causal explanation and description* of the respective neurophysiological processes that lead to peculiar subjective experiences can at least provide a framework to study the so-called explanatory gap. It can explain *why* a certain physical causal event produces a certain subjective experience with its specific phenomenal features rather than another. Below, I present an analysis of two examples from this approach: first, that of Todd Feinberg and Jon Mallatt, and second, that of Alva Noë and Susan Hurley⁸.

These scientists and philosophers seek a concrete, scientific way to explain the specific *this-ness* of conscious experiences, meaning their peculiar phenomenal, quali-

⁸ Of course, there are a great many “externally oriented” strategies applied to the explanatory gap which rely on the third-person perspective of a natural scientific attitude as their point of departure. Daniel Dennett (1996) would say that the idea of “philosophical zombies”—hypothetical creatures who are completely equivalent to conscious human beings in functional regard but lacking a consciousness (cf. Chalmers, 1996)—is a misleading construction that evades the real issue of consciousness, which is primarily a functional problem. Patricia Churchland (1996) and other eliminativists would say that even the problem of the explanatory gap is ill-fetched and misleading because there is no such a thing as “consciousness.”

Here we cannot provide an overview of these different strategies, as it is neither the focus nor the aim of the present study. In this section, we highlight only certain characteristic strategies—leaving us open to the accusation of “cherry-picking”—to make our point.

For an early overview, see (Varela, 1996, 330–333); for a more recent one, see (Godfrey-Smith, 2019). For a recent comparative analysis, see (Revonsuo, 2021). See also: (Tye, 2021).

tative features. They incorporate a huge amount of neurobiological information into their attempts. Feinberg and Mallatt argue that consciousness is an *emergent* feature of the functioning of living beings with a nervous system that has achieved a certain grade of complexity. “Emergence” here is a characteristic of complex systems that have novel features that can be explained only in terms of the peculiar forms of interaction among the parts of the system in question. As Feinberg and Mallatt assert: “Emergence occurs in complex systems in which novel properties emerge through the aggregate functions of the parts of that system” (2020, 2). Regarding the genesis of consciousness, they also differentiate between “strong” and “weak emergence.” In the case of “strong emergence”: “no known properties of neurons could ever scientifically reconcile the differences between subjective experience and the brain; i.e. that the explanatory gap can never be closed” (2020, 4). In the case of “weak emergence,” complex systems have real novel features and emergent new qualities, but such emergence can be explained by a causal story that is accurate enough. They believe that consciousness is an emergent feature of living beings in the “weak” sense and, thus, is a case of “weak emergence.”

Below the level of consciousness, Feinberg and Mallatt highlight *two* major *emergent* levels of complexity which laid the groundwork for the appearance of conscious experience: life and nervous systems. Every living being exhibits a number of systematically interrelated emergent features, such as embodiment (separation from the environment by possessing its own living body), information-based organization (DNA), communication with the environment, goal-directed or teleological being (self-preservation), metabolism, reproduction and dynamic adaptation to the challenges of its surroundings⁹. The next major emergent level was the appearance of neurons, and the nervous system in particular. This granted a much faster and more efficient way to process and integrate sensorimotor, cognitive, and affective information within an organism, much more effective ways of learning and problem solving, and much greater adaptivity to environmental challenges. Feinberg and Mallatt attach the third emergent level, consciousness, to a higher stage of organization and development of the nervous system that enables the organism to produce sophisticated models of its internal and external environments, more nuances of affective evaluation of information related to interoceptive and exteroceptive data, and more flexible behaviour (Feinberg & Mallatt, 2016; Ginsburg & Jablonka, 2019).

To offer a basically physicalist solution to the problem of the explanatory gap, Feinberg and Mallatt (2020) turn to Bertrand Russell’s distinction between “know-

⁹ On this point, see also: (Maturana & Varela, 1980; Mayr, 2004; Ginsburg & Jablonka, 2019).

ledge by acquaintance and knowledge by description” (Russell, 1910). All three agree that a fundamental difference exists between knowing something from a first-person perspective experience and having access to something only externally (i.e., from the third-person point of view). Feinberg and Mallatt speak about an “experiential gap”—unequal access to subjective experience from the first-person perspective—and a “descriptive gap”—unequal access to subjective experience from a third-person viewpoint. In their opinion, the “experiential gap” arises from the fact that a living being is an embodied organism, a relatively closed system, who has *a unique and exclusive way* of accessing some of her information processes that—due to the ontological structure of the physical world—no organism but she alone possesses. In their interpretation, this conception does not violate physicalism and harmonizes with the principles of “weak emergence.”

As we said earlier, in Feinberg’s and Mallatt’s opinion, it is a particular causal chain or story that individualizes a concrete experience as a specific ultimate result of bodily, neurophysiological and cognitive processes. The peculiar qualitative features of conscious experiences are due to several strongly related factors. Firstly, the experiencing activity always pertains to *relatively closed physical systems*. That is, to strongly embodied organisms that have unique access to their sensorimotor, affective and cognitive states and events. The “what-is-it-like”-ness of subjective states and processes is also shaped by the complete, concrete bodily constitution of the particular organism. Secondly, the qualitative features of subjective experiences are also determined by the physical characteristics of the stimuli in question¹⁰. Thirdly, internal, bodily causal processes, with all their peculiar characteristics, shape the final qualitative form of a particular conscious subjective experience, *establishing internal access* of the particular organism to its inner states and events¹¹.

¹⁰ “Electromagnetic waves of light have many different physical properties than the mechanical forces of touch, and both differ from chemical odorants, so translating all three kinds of stimuli into similar feelings would miss the special properties that make each sense so especially informative. Therefore, these diverse sensations should not—and indeed could not—all have the same subjective ‘feel’” (Feinberg & Mallatt, 2020, 7).

¹¹ Of course, Feinberg and Mallatt’s approach did not convince everybody as a successful solution of the “Hard Problem of Consciousness,” as an indubitable way to bridge the Explanatory Gap. The most frequent point of criticism made is that their claim is “untestable.” Susan Blackmore expresses such a reservation concerning their position. (“Along the way they make untestable claims: that reflexes are not conscious, that sensory hierarchies require four or more levels to be conscious, or that the ‘defining features of consciousness’ include non-nested and nested hierarchical functions, isomorphic representations and mental images. It is not that these suggestions are wrong but that there is no way of telling whether they are. And the argument is circular—specify in advance what you think the defining features are and then conclude that any creature with those features must

Alva Noë and Susan Hurley also chose the external approach. As they write:

We suggest that an inward focus in response to explanatory gap worries can be misleading. To find explanations of the qualitative character of experience, our gaze should be extended *outward*, to the dynamic relation between brain, body, and world. (Hurley & Noë, 2003, 132, my emphasis — *B. M.*)

Noë and Hurley differentiated between the “absolute” and the “comparative explanatory gap.” The “absolute gap” relates to the question of why an objective, physical process—a particular neurophysiological activity—should result in anything like a subjective experience. The “comparative gap” refers to the problem of why a peculiar neurophysiological process would lead to *this* subjective feeling or experience instead of *another*. While in this particular article they set aside the question of an “absolute explanatory gap”¹², they believe that a “comparative” or relative gap could be handled by careful and nuanced neurophysiological analysis.

Concerning the “comparative explanatory gap,” they make a further distinction between “intermodal” and “intramodal” gaps. An “intermodal” gap refers to the question of why a particular neural process leads to a *visual* experience instead of an e.g. *auditory* one. An “intramodal” gap, on the other hand, pertains to the question of why a peculiar neural event ends up in the sensation of e.g. a *red* patch instead of a *blue* one. Noë and Hurley contend that such questions could be addressed by detailed investigations and causal studies of the interactions between the brain, body and world. In this context, they introduced a third related distinction, this one between “cortical dominance” and “cortical deference” (or “neural dominance” and “neural deference”), which they argue could help explain the difference between intermodal and intramodal gaps in a philosophically and scientifically intelligible way. They describe this latter distinction as follows:

In cases of *cortical dominance*, cortical activation from a new peripheral input source gives rise to experience with a qualitative character normally or previously associated

be conscious” (Blackmore, 2017, 312)). Although, Blackmore does highlight the value of the work of Feinberg and Mallatt (2016) as offering an exceptionally exquisite description of the evolution of the nervous system and its mechanisms to represent the environment. Another, more recent criticism of Feinberg and Mallatt’s ideas can be found in Takayuki Suzuki, who claims that their approach is an important step in the naturalization of consciousness, but that it does not solve the “Hard Problem of Consciousness” (Suzuki, 2022). The special merit of their evolutionary model is, Suzuki claims, that they were successful in showing where the “Explanatory Gap” was the smallest, but, according to Suzuki, in the end they failed to bridge this gap.

¹² They believe, however, that the “absolute” gap could be also addressed using what they call the “*sensorimotor approach*” (Myin & O’Regan, 2002; O’Regan & Noë, 2001; Thompson, 2007). More about this in the next section.

with cortical activity in that area. In such cases, we can say that cortical activity in a particular region *dominates*, that is, it retains its “natural sign” or normal qualitative expression. In cases of *cortical deference*, in contrast, cortical activity in a given area appears to take its qualitative expression from the character of its nonstandard or new input source. In these cases, the qualitative expression of cortical activity in that area changes, *deferring* to the new input source. (Hurley & Noë, 2003, 133)

In other words, they connect the explanation of the peculiar qualitative features of conscious experiences, which involve certain sense organs, different qualitative types (e.g. a sensation of red instead of blue) in relation to *neural plasticity*¹³, and our dynamic relationship to ourselves and the world. However, as mentioned above, Noë and Hurley—along with scholars such as Erik Myin and J. Kevin O’Regan—further posit that in the end, the “absolute explanatory gap” could also be handled by applying what one could call the “*sensorimotor approach*,” which relates to the dynamic relationship between the brain, body and world.

This approach involves a more *holistic* treatment of the brain–body–world relationship according to which subjective phenomenal consciousness is the *active expression* of the particular way that an organism practically inserts itself into its surroundings: the phenomenal givenness of a particular way that the organism *enacts* itself within its world or surroundings (cf. Noë, 2021). In the opinion of those who follow this approach, phenomenal consciousness is the manifestation of “*skilful knowledge*” about ourselves, the world and how to deal with the difficulties and challenges with which the world presents us¹⁴. For them, it is imperative that we study the details of this actively performed or enacted relationship, whereby we become capable of gradually closing the “absolute gap” through careful investigation of the detailed nature and structure of this actively conceived tripartite relationship.

The strategy of a dynamic “sensorimotor approach,” as Evan Thompson mentions, is “the strategy of working on both sides of the gap” (Thompson, 2007, 256). The program of enactivism and embodied cognition to “make the explanatory gap fruitful” is *a logical consequence of this approach*. However, in this section, we highlighted only one partial and abstract segment of it—its predominantly *externally related* research orientation. In the next section, we will have a closer look at the “fuller”

¹³ The capacity of the nervous system to reorganize itself in a dynamic manner in order to flexibly adapt to new environmental circumstances and challenges. To the question of neural plasticity see also (Ginsburg & Jablonka, 2019, esp. 260–261): “In a sense, it is the neural network that constitutes and defines its units (the neuron and the synapse) rather than the other way around.”

¹⁴ “According to the sensorimotor approach, perceptual experiences are active manifestations of a kind of skilful knowledge and are defined in terms of potential for action. In general, it is difficult to describe the knowledge underlying a skill” (Thompson, 2007, 259).

version of this project, in which the researchers attempt to bring the two edges of the gap closer to each other in a systematic way by “working on both sides of the gap”¹⁵.

3. MAKING THE EXPLANATORY GAP FRUITFUL: THE STANDPOINT OF EMBODIED COGNITION

The main strategy of phenomenologically committed proponents of enactivism and embodied cognition is to work “on both sides of the gap”—as Thompson said. They attempt to narrow this gap systematically and gradually by comparative and interrelated analyses of the external and internal aspects of experience. Their goal is to lead the “mind–body” question back to the “body–body” question (Fuchs, 2018; Thompson, 2007)—which essentially refers to the Husserlian distinction between “*Leib*” and “*Körper*” (i.e. between the subjective and objective aspects of the body)¹⁶.

¹⁵ We should emphasize that phenomenology is heavily present in the research of scholars such as Alva Noë, Susan Hurley, Erik Myin and J. Kevin O’Regan. In this present section, however, I only wanted to highlight the externally related moments that are prevalent in their philosophical and scientific efforts.

¹⁶ See e.g. (Husserl, 1960, 1989a, 1997). This is covered in detail in the next section: 4. A Husserlian Stance Concerning the Explanatory Gap: Proceeding from Immanence Towards Transcendence.

In this regard it seems indispensable to have a closer look at Evan Thompson’s interpretation and criticism of Husserl—to see the difference in a sharper light. First of all, we should emphasize that when Varela, Rosch, and Thompson presented their phenomenologically committed version of Embodied Cognition in 1991, they were aligned more with Merleau-Ponty than Husserl—of whom, under the influence of Hubert Dreyfus’s interpretation (Dreyfus, 1982), they had a rather critical opinion. According to them, Husserl was 1) a representationalist, 2) a methodological solipsist, 3) underestimated the bodily features of consciousness, 4) had a rather idealist and representationalist picture of the life-world, and 5) tended to substantialize consciousness in an idealistic manner. Evan Thompson systematically revised this interpretation of Husserl in 2007 (Thompson, 2007, 413–416). He said that when they were working on their book their understanding of Husserl was strongly influenced by Dreyfus, and they only read a limited number of Husserl’s texts (*Logical Investigations, Ideas I, Cartesian Meditations, Crisis of the European Sciences and the Transcendental Phenomenology*). Thompson said in 2007 that, after processing a large number of manuscripts by Husserl, he no longer thought that their 1991 criticism was correct. Now, he does not think that Husserl was a representationalist, methodological solipsist, placed little emphasis on embodied character of subjectivity, or had a representationalist and overly idealist conception of the life-world. He believes that Husserl’s phenomenology even today could provide a substantial contribution to contemporary scientific and empirical research on consciousness. Thompson says that he can even endorse a methodological, non-idealistic, non-substantialist conception of the *transcendental* attitude. On the other hand, Thompson is still of the opinion that there are *a large number of metaphysically strongly committed, strongly idealist elements* in Husserl’s texts that Embodied Cognition—even in its criticism of reductionist or eliminativist materialism—cannot join (esp. Thompson, 2007, 81–87, 356–359). We e.g. need to “guard” ourselves against the assump-

In this project, these authors attach special significance to *circular relations* between the subjective and objective sides of experience, and between brain, body, behaviour and environment (cf. Fuchs, 2020).

Earlier¹⁷, we stated that phenomenologically committed versions of embodied cognition and enactivism have a bidirectional strategy or objective. On the one hand, they aim to avoid dualism, that is, the “doubling” of the world. They oppose functionalism (as smuggling back mind–body dualism in the form of software[mind]–hardware[body] dualism) and representationalism (which would again “double” reality as *internal mental representations* and *represented external* entities and states of affairs) on this and other grounds. They want “mind” and “world” to “overlap” completely (Varela, 1996, 346). They also endeavour to lead the mind–body question back to the “body–body” (i.e. *Leib–Körper*) problem for this reason. On the other hand, they also want to avoid *bold reductionism*, the thesis of the sheer identity between the mental and the physical, and also *eliminativism*, which would simply erase anything regarded as a mental, psychic, conscious etc. phenomenon (cf. Noë, 2021)¹⁸. They instead

tion “physical forms are constructions out of a preexistent consciousness” (Thompson, 2007, 82). Thompson did not share Husserl’s radical anti-naturalism, nor his emphatic protest against the possibility of the mathematization of consciousness (Thompson, 2007, 356–357).

We can see that in 2007 Thompson had a much more positive and affirmative reading of Husserl than in 1991. However, he also emphasized his critical constraints concerning Husserl, and differs from a strictly Husserlian position at many points, which also makes his conception—and the *second* strategy concerning bridging the explanatory gap—clearly different from the *third* approach that we are going to treat in the next section, that could be labelled as “more orthodoxically Husserlian.”

Firstly, Thompson—following Varela (1996)—was working on “two sides of the gap” in parallel. For him, the subjective point of view was not an absolute point of departure as it was for Husserl. That makes Thompson’s approach—and other proponents of Embodied Cognition, who attempt to handle the problem in a similar way—unambiguously different from the third strategy, from a more radically Husserlian viewpoint. Secondly, Thompson follows Varela also in the regard that he attempts to articulate a more monistic—although non-reductionist—ontology, and tries to bring subjectivity and objectivity, consciousness and the world in a complete overlap. That also means that Thompson explicitly and expressively does not endorse a more radical conception of transcendentalism—such a conception that we would like to follow, after Sokolowski, Held, and Tengelyi (see earlier), which attributes a stronger metaphysical reality to the transcendental dimension, next to the dimension of physical reality.

These latter considerations make the second and the third strategy plainly different.

¹⁷ See footnote 5.

¹⁸ “But the promise, and beauty, of such an approach [enactivism] is that it may help us to explain how people and other animals enact world and experience, not in the ground it is wrongly thought to supply for denying experience, presence and world altogether” (Noë, 2021, 969).

attempt to explain consciousness and subjectivity in terms of an *emergent feature of reality* that arises from the intricate and complex dynamics of natural processes.

An important element of this project (often characterized or labelled as the “naturalization of phenomenology”)¹⁹ is to treat the individual organism as a co-dependent part of its environment and to derive consciousness from active organism—environment interaction²⁰. These authors conceive of the organism in a *holistic manner*, and they believe that in a certain way, the *entire body* participates in the concrete way in which consciousness is realized (cf. Cosmelli & Thompson, 2010)²¹. According to them, the *ineffably peculiar qualitative character of subjective experience* is partly due

¹⁹ Cf. (Petitot et al., 1999). It is important to mention that there is a significant overlap, but the phenomenology of embodied mind and naturalized or naturalizing phenomenology are not entirely identical. Dermot Moran, for example, treated the problem of embodiment in a number of different articles (cf. Moran, 2010, 2013a, 2015, 2017), and he still attaches great importance, actuality, and relevance to Husserl’s antinaturalistic and transcendental attitude (Moran, 2008, 2013b).

²⁰ An approach which, in my opinion, could be traced back to Merleau-Ponty’s work *The Structure of Behavior* (1967) at the latest.

²¹ The *holistic* conception of the organism and the *co-dependent* character of the organism-world, or the brain-body-environment relationship mean first and foremost two things. Regarding the *holistic* approach of the organism, we should say that proponents of Embodied Cognition attempt to explain consciousness and behavior in terms of a general structure and top-down causality, instead of a more linear and mechanistic causal explanation. They believe that there is a general structure which is constitutive in the understanding of the particular causal processes in the organism, as well as its individual actions. This conception is clearly reflected in the common work of Humberto Maturana and Francisco Varela (1980) regarding autopoiesis, as well as in later classical works of Embodied Cognition (cf. Varela, Thompson & Rosch, 1991; Thompson, 2007). Furthermore, concerning the holistic character of *mental life*, these authors believe that the psyche, the organism’s inner mental sphere has likewise a holistic and organic structure, like its entire body and body-world relationship, which reflects the organicity of the external, physical structure of the organism. *In the peculiar constitution of the mental life and sphere* of an organism—these theoreticians claim—a *whole specific bodily way of life is reflected*, and there is an entire sedimented evolutionary pre-history.

On the other hand, as regards the co-dependence between organism and environment, and between brain, body, and world, this does not mean—of course—that world would be somehow dependent on an organism or a group of organisms, as if there was no world, if there was no experiencing or acting subject either. This co-dependence refers to the peculiar nature of their *connection*. We can understand the bodily and structural constitution and particular way of functioning of an organism in respect to its concrete, specific relation to its environment, as well as to its whole evolutionary pre-history. Organisms, in turn, also deeply affect their environment through their particular way of living and metabolic processes. They are capable of transforming their entire environment— just think of constructions, like a beehive, ant nest, beaver’s lodge or spider’s web. If a species is gone from a specific environment, several others might follow it in the way of extinction. Or think of the “Great Oxidation Event” circa 2,5–2,8 billion years ago, when aerobic, oxygen-producing organisms started spread overall the planet, they started to change the entire atmosphere of the Earth, which resulted in mass extinction of anaerobic life-forms, and mass-spread of aerobic life.

to this holistic manner of realization because so many-neural and non-neural, bodily and (partly) extra-bodily-factors participate in the realization of consciousness. Therefore, they contend that there is always something unique and individual in each conscious experience, not only because it occupies a unique place on a chronological line, but also due to the individuality and uniqueness of the entire momentary causal system that realizes a particular momentary experience or conscious state.

Exponents of this approach employ several methodological techniques to connect the subjective and objective sides of experience and to bind them together as tightly and intimately as possible—or, in other words, to bridge the explanatory gap. In a methodological respect, there are two general ways to treat this problem: *neurophenomenology* and *microphenomenology*. *Neurophenomenology*—as established and described by Francisco Varela (1996)—consists of a method according to which we teach the participants and volunteers in experiments the elements of the phenomenological method, train them how to use this method in a rudimentary way and instruct them how to observe and describe their experiences from a phenomenological attitude (Gallagher & Zahavi, 2008, 33–38; Lutz et al., 2002). During the experiment, we let them observe their own experiences according to their training and collect their own first-person accounts later—while we also observe them externally, possibly using certain neuroimaging devices (e.g. EEG, MRI, fMRI, or PET). Lastly, we systematically compare the first-person accounts with the results of third-person external observations of the bodily and neurophysiological functioning of the participants.

Microphenomenology is a second-person perspective interviewing method. It also involves special training of participants in how to observe their feelings and experiences in a very nuanced “microscopic” way (thus the name “microphenomenology”). It focuses on grasping the tiniest details and changes in the experiential field and flow, and on enabling participants to grasp and describe those details and changes (Petitmengin, Remillieux & Valenzuela-Moguillansky, 2018). Although this method focuses on the interviewing procedure, it is also open to neuroimaging techniques²².

Formalization is a crucial element in this project to connect the two sides of the explanatory gap. As an initial step in bridging the subjective and objective aspects of experience, these authors look for *isomorphic* features on both sides (i.e. on the psychological and bodily-neurological sides of conscious functioning). However, they criticize and reject the idea of mere “analytical isomorphism,” according to which there would be a *one-to-one isomorphic correspondence* between conscious content

²² See e.g. “Micro-phenomenologically Informed Neuroimaging”. <https://www.microphenomenology.com/cognitive-projects>

and brain states, whereby the latter would merely represent the former somehow and vice-versa (cf. Petitot et al., 1999; Thompson, 2007, 297–298, 357–358). Even a mere reference to the phenomenon of *neural plasticity* (as we made earlier) would render implausible the assumption of a brain state or process which could permanently correspond or correlate in an isomorphic way to one phenomenal conscious state once and for all. Although there are certain obvious *topographically* and *geographically isomorphic features* of brain processes and correlated conscious content and events, these authors embed the attempt at the formalization and articulation of a formal model into a much wider theoretical and particularly mathematical framework, namely: “*dynamical systems theory*.” Dynamical systems theory is an area of mathematics that describes the behaviour of complex, often nonlinear systems, primarily by using differential or difference equations. This formal and mathematical approach is suitable for the phenomenologist exponents of embodied cognition and enactivism for at least two reasons. Firstly, this approach encompasses the *variability* involved in neural plasticity (“neural deference”) and a dynamic body—environment relationship. Secondly, it can also embrace physical and psychological factors and their dynamic interactions in one formal theoretical framework. Moreover, it is also able to present these factors as interdependent parts of one and the same system and treat their relationship accordingly²³.

Mathematization, however, is only one element of this complex project, the aim of which is *to mutually enlighten* phenomenology and the cognitive sciences or biology through each other and to demonstrate that no firm line exists between first and third-person perspectives (cf. Gallagher, 1997). These authors are very well-aware that through merely formal description we will not be able to explain the qualitative character of conscious experiences. This is not the aim, however. Formal descriptions and formalization are only a means of contributing to the connection or bridging the two sides of the explanatory gap, but these authors know that formalization alone cannot accomplish this. However, there is no need to make the attempt, as this is not its task. By drawing upon “*dynamical systems theory*” to describe the complex isomorphic forms of psychophysical structures, these authors only want to show that the relationship between the physical and the psychic or psychological is not at all arbitrary. They know with full clarity that the formal approach cannot explain why a particular conscious experience has a given peculiar qualitative character and not another. They maintain that the *total causal description* of a process that ends in an

²³ “Because dynamic systems theory is concerned with geometrical and topological forms of activity, it possesses an ideality that makes it neutral with respect to the distinction between the physical and the phenomenal, but also applicable to both” (Thompson, 2007, 356).

experiencing act (which includes the particular material elements involved in this process) is capable of providing such an explanation. They further contend that it is not only the structure which matters in the realization of consciousness but that the material constitution of the particular organism is also indispensable to explaining a conscious experience of *a certain* peculiar qualitative character rather than another (cf. Fuchs, 2021; Shapiro, 2004)²⁴.

4. A HUSSERLIAN STANCE CONCERNING THE EXPLANATORY GAP: PROCEEDING FROM IMMANENCE TOWARDS TRANSCENDENCE

This section represents an attempt to reconstruct a third way to bridge the explanatory gap that commences from the immanent sphere of consciousness and tries to attain transcendence from within. In this endeavour, our guide will be Husserl's idea of the bodily self-constitution of the ego, or, stated otherwise, the Husserlian process through which the transcendental ego constitutes itself in the form of a bodily empirical being in the world, and does so in a necessary way.

The key concept in this inside–outwards bridging attempt is Husserl's notion of “*constitution*.” For Husserl, the way things appear to us (and consciousness appears to itself) has certain empirical and contingent but also *a priori* and necessary features (cf. Moran, 2002, 164–168, 2005; Sokolowski, 1970, 2000; Zahavi, 2003, 72–77). From a Husserlian perspective, things cannot appear in a completely arbitrary way. He used the term “constitution” to refer to the process by which consciousness presents (*stellt*

²⁴ Needless to say, embodied cognition, specifically the theoretical endeavours of e.g. Alva Noë, Susan Hurley, and Evan Thompson—and the particular way they attempted to handle the problem of the “explanatory gap”—provoked a number of different types of criticism. Common, recurring topics of criticism include, but are not limited to, the charges that embodied cognition operates with a depleted notion of cognition, that it applies vague, poorly defined concepts, that it offers no real, fruitfully applicable alternative to computational cognitive sciences, or that it could not justify its claim in a really indubitable way that the body has a constitutive role in the emergence of consciousness, rather than a merely causal (cf. Shapiro & Spaulding, 2021). In the last few decades there were many controversies between proponents and detractors of embodied cognition, that included criticism of rejection of functionalism by embodied cognition (cf. Rupert, 2009), or criticism of embodied cognition's critical attitude towards representationalism (cf. Venieri, 2015), and many other sorts of criticism aimed at the allegedly vague definitions of embodied cognition and other problematic issues (cf. Goldinger et al., 2016; Zwaan, 2021). In particular, regarding the explanatory gap, the embodied cognitivist stance is subject to criticism of whether it can handle the “hard problem of consciousness” any more effectively or fruitfully than classical cognitivist, functionalist, or mechanical approaches. The details of such debates, however, exceed the scope of this present study, where we only wanted to treat the embodied cognitivist approach of the “hard problem” as a characteristic strategy to cope with this challenge.

vor) objects to itself and presents itself to itself in an *a priori* and necessary fashion. Examples of constitution could include the appearance of a *spatial object*, whose forefront—in Husserl’s view—cannot appear without indicating its non-appearing, unseen sides; or a *temporal event*—such as hearing a melody—which necessarily involves a tripartite structure of primal impression-retention-protention. In the same manner, Husserl also maintained that constitution pertains to the necessary way of being of the ego, that it must ultimately appear as a bodily, historically and culturally shaped practical and active creature in the world (cf. Husserl, 2008a, 251–258; Held, 1966).

Husserl described the self-constitution of the ego as having several moments and layers. In this section, we will have a closer look at this description and attempt to offer an inside-outwards processing explanation of the explanatory gap by following up on the different segments and steps of Husserl’s conception of the self-constitution of the transcendental ego in the form of a bodily empirical subject in the natural world.

This section is articulated in three subsections: 1) The General Outlines of Husserl’s Theory of the Body, 2) Concrete and Abstract Consciousness, Motivated and Ideal Possibilities, 3) The Role of the Nervous System in the Constitution of Our Concrete Embodied Being: An Internal Theoretical Vehicle for Bridging the Explanatory Gap.

4.1. The General Outlines of Husserl’s Theory of the Body

Husserl discovered the fundamental importance of the body to an understanding of the specific and exact structure of conscious experience at a relatively early stage of his career in his 1907 *Thing and Space* lectures (Husserl, 1997). In *Thing and Space* and later works²⁵, he conducted detailed investigations and elaborated quite thoroughly on the experience of embodiment and the problem of how concrete consciousness is affected and characterized by the inherently bodily nature of subjectivity²⁶.

²⁵ Cf. (Husserl, 1960, 1980, 1989a, 2001, 2008a) etc.

²⁶ For more on Husserl’s theory of embodiment, see (Behnke, 2011; Moran, 2010; Zahavi, 1994; Zahavi, 2003, 98–109).

Regarding the term of “concrete consciousness,” we consider it important to make the following remarks. The term here does not refer to “individual” or “specific” acts or events of mental life, or “tokens” of the mental sphere, but just the opposite. It refers to the entirety of conscious life or the mental sphere as an organic, coherent whole. “Concrete consciousness” here, in the widest sense, refers to a coherent set of structures that make a concrete conscious, bodily existence in the world possible. It is something to which Heidegger and Merleau-Ponty referred with the expression “Being-in-the-World” (Heidegger, 2001; Merleau-Ponty, 2002). It is very close to Husserl’s idea of

He gradually realized that no conscious functioning is conceivable without considering the essentially incarnated character of consciousness. As he pointed out, one's own body is involved even in the mere constitution of space and spatial objects. Not even the first passive experiences related to the external world could begin without a body. Our own body appears first as a special object, which also counts as the *zero point of orientation* in space (cf. Husserl, 1960, 152). The body is an absolute *here* that I cannot "rip out" of my visual field, regarding which everything else is a *there*. It is, furthermore, a special object because it "accompanies me" wherever I go, and I have *internal access* to it. I experience my body *from the inside* and also *from the outside* at the same time. Concerning the external aspect of the body, it is *a necessarily incompletely constituted object*— which means that I cannot see e.g. the back of my body directly, without any technical visual aid (such as a mirror).

Husserl conceived of one's own animate body as an inseparable unity of subjective and objective aspects, *Leib* and *Körper*, which are constituted as interdependent moments of one and the same phenomenal system, as two sides of the same coin (cf. Husserl, 1973a, 263, 1973b, 75)²⁷. In other words, for Husserl, in the case of one's living, animate body, the objective aspect cannot be constituted without the subjective, and vice-versa. *Externally*, our body appears as a systematically coherent complex of external perceptions of an object, that is simply an integral part of our external experiential field and flow. Internally, as *Leib*, our body is constituted as a coherent system of bodily sensations and feelings of bodily position, movements and orientation (i.e., a system of proprioceptive and kinaesthetic experiences) and also as a system of *bodily capacities*—a system of multiple instances of "I can" („Ich kann“). Throughout one's

"monadic subjectivity," as he presented this conception in the 1920s, when he started to elaborate systematically his "genetic phenomenology." When Husserl said in the *Cartesian Meditations* that the monad is "the full concretion of the Ego" (Husserl, 1960, 67), he implied that what could be referred to with the term "concrete consciousness," and the situation is the same with his expression of "transcendental person" (Husserl, 2002b, 198–201, 451–453). See also: (Luft, 2011). The main point is that Husserl in *Ideas I* and *II* presents a rather formal conception of the transcendental ego. He said at that time that it was a purely formal logical pole to actions and experiences, something "without any hidden inner richness" (Husserl, 1989a, 111). In this regard, Husserl's opinion changed significantly when he started to elaborate his ideas on concrete monadic subjectivity as *transcendental subjectivity*, and the notion of the transcendental person, in the 1920s. Namely, he thought that embodiment, a connection to a concrete world, intersubjectivity, historicity, and culture does not only belong to the empirical ego, but also to *the transcendental ego as transcendental*. This transcendental ego must have structures with which to make a concrete conscious existence in the world possible, and these structures must be conceived as transcendental.

²⁷ Husserl often used the terms „*Leibkörper*“ or „*leibkörperlich*“ to emphasize the inseparability of the union of the subjective and objective aspects of the body (cf. Wehrle, 2020).

concrete life history, the specific composition and structure of this system constantly changes. A teenager has different bodily capacities and possibilities than someone in her sixties. Regardless, the internal structure of the *Leib*, according to Husserl, has certain *eidetically*²⁸ invariant moments and features in the case of every human person.

In Husserl's view, there is an incredibly complex relationship between the ego, its body and the world. He interprets the body as "an organ of the will," and thus of the ego (Husserl, 1989a, §38, 159–160). In other words, as an *instrument*. However, he also emphasized that the body is also something indispensable for the constitution of objects and space (Husserl, 1989a, §39, 160–161, 1997; cf. Zahavi, 1994). According to Husserl, without the body, the constitution of things, space and other subjects cannot even start in the first place. The ego integrates and embeds itself into the environment and the world as such through its bodily movements and activities. *The ego, furthermore, could constitute itself* in a more specific, concrete manner through its constituting interactions with things, space and other subjects. To put it another way, there is a circular relationship between the constitution of the ego, body and world—each member of this system is interdependent, correlated and mutually constitutes the other (cf. Moran, 2013a).

The next important question is this: What exactly is meant by the constitution of the *concrete* consciousness and the *concrete* ego in Husserl?

4.2. Concrete and Abstract Consciousness, Motivated and Ideal Possibilities

Husserl's relevance to analytic philosophy of mind has been repeatedly emphasized in the last few decades by several authors²⁹. In this present subsection, we lay out some elements of the conceptual and theoretical foundations of an attempt to bridge the explanatory gap starting from conscious immanence, following Husserl's notion of constitution as a guide. It should be noted that, for Husserl, the relationship between the subjective and objective sides of experience, and *Leib* and *Körper* in particular, has *a priori* necessary features that we will use to indicate a possible way to bridge the explanatory gap. In such a project, we are also forced to *modify* cer-

²⁸ "Eidos"—that is to say, regarding the *essence* of a certain type of phenomenon. From *Ideas I* (1983) onwards Husserl uses this term in a rather consequent way to refer to *universal and essential features* of phenomena.

²⁹ Cf. (Cobb–Stevens, 1990; Dahlstrom, Elpidorou & Hopp, 2016; Dreyfus, 1982; Gallagher & Zahavi, 2008; Moran, 2013c; Smith, 1983; 2007; Smith & McIntyre, 1982; Smith & Thomasson, 2005; Yoshimi, 2022).

tain points of Husserl's idea of the mind–body relationship somewhat in the direction of Merleau-Ponty's philosophy. However, Husserl's concept of constitution offers an extremely effective and fruitful theoretical vehicle in this regard, as I endeavour to show here.

As we saw in the previous subsection, in Husserl's eyes, the subjective and objective aspects of the body, *Leib* and *Körper*, are constituted in an *a priori* necessary fashion in an *a priori* union with each other. In strong connection with this, the sensory achievements of sense organs, that is to say, *sensations* (*Empfindungen*), are also produced in an *a priori* necessary manner by bodily sense organs (Husserl, 1989a, 304, 2020, 52)³⁰. However, the *soul* has certain higher capabilities, functions, and content which—according to Husserl—are partly independent from the body, and *which have an empirical and contingent relationship to the latter*. Elsewhere, I argued that in the light of the last hundred years of development in philosophy of mind, neuroscience, and cognitive sciences, *we can revise this Husserlian conception, and we can also extend the a priori connection of Leib and Körper to higher mental faculties* (Marosan, 2022). In this way, we can formulate a conception that might be called the “Em-

³⁰ This claim could be justified at a higher stage of constitutive analysis. The first crucial step is to conceive *Leib* and *Körper* as moments of one coherent unity, of the very same phenomenal system, as two sides of the same coin (cf. Husserl, 1973b, 414, 462; 1977, 150–151; 1989a, 152–154). In the case of a living, feeling, experiencing animate subject, in Husserl's opinion, there is no *Leib* without a *Körper*, and the *Körper*, as a physical body, necessarily has a *Leib* as its internal aspect. The phenomenological regard can disclose *a priori* necessary features of the relationship of *Leib* and *Körper* as a whole, as well as their certain specific parts. The next crucial step is to grasp one's physical body (*Körper*) as a system of bodily organs, each of which has a different function, which enable certain transcendent, bodily actions in the world, and each of which has internal and external (*leibliche* and *körperliche*) aspects, similar to the body in its entirety. The following third major step in the constitutive analysis of the self-constitution of the bodily ego is to realize that the functioning of these bodily organs—such as the sense-organs—and the results of this functioning, do not only have a merely empirical and causal relationship, but their relationship also has certain *a priori* features. If we abstract from this insight, Husserl's remarks on the relationship of sensory experiences and physical bodily functioning might seem merely descriptive assertions, rather than constitutive and phenomenological statements (Husserl, 1989a, 304). “As regards sensations, the dependence means that a certain Bodily state (or, rather, a certain form of Bodily states, admitting the process of metabolism, which removes the individual identity of the elements of one and the same organ, of the same nerves, ganglia, etc., though it maintains the same particular form) has, as its univocal and Objective consequence, a certain sensation in a determinate stream of consciousness bound to its respective Body” (Husserl, 2020, 52). “The appearances and other contents of consciousness (lived experiences) depend on the body (*Leib*)” (Husserl, 2020, 52). In my interpretation, however, these assertions imply that the relationship between sensation and the correlative bodily functioning is not entirely empirical and contingent, but at least at his lower level of mental life also has certain *a priori* necessary features.

bodied Manifestation Thesis,” according to which *every mental capability, structure, and instance of content refers to a bodily basis as its carrier and realizer*, and—based upon Husserl’s idea of constitution—there is an *a priori* constitutive relationship between them.

Here we can raise the question: Does the mental sphere have an *a priori* necessary connection to the body? From time to time, Husserl meditates on the possibility of an ego without a body (Husserl, 1973b)³¹. This, however, turns out to be an *abstract possibility* for him. In other places, he is very emphatic that the concrete personal ego cannot be *conceived without an actual physical body*³². This problem necessitates turning to Husserl’s distinction between *ideal and real or motivated possibilities* (cf. Zhok, 2016). “*Ideal possibilities*” in Husserl refer to such possibilities that do not entail logical contradiction: to things, events, and situations that are purely imaginable and conceivable (cf. Husserl, 2002a, II, §30, 250–251, §62, 308–311). “*Real*” or “*motivated possibilities*,” on the other hand, are based upon our *empirical knowledge of the world*; such possibilities are motivated by this previous knowledge (Husserl, 1983, 107, 336–337)³³.

³¹ “I can think, however, that I don’t have a body at all” (Husserl, 1973b, 547). In *Ideas III*, Husserl speaks of the possibility that we can imagine a *locomotive* with consciousness (Husserl, 1980, 104).

³² “A person cannot be concrete without having an objective body as a lived body” („Eine Person kann konkret nicht sein, ohne einen Körper als Leib zu haben“) (Husserl, 2012, 380).

Here we should also mention that is a common misunderstanding concerning Husserl’s notion of *Körper* that this term in his work refers to the externally appearing body. Generally, yes, the term has this meaning, but not always. In certain places, Husserl uses this expression explicitly to mean the *physical body*, which exists outside of our mind in nature.

The constitutive connection between the phenomenologically reduced, phenomenally appearing body and the physical body in nature is very complex, but it could evidently be reconstructed. Based upon the related analyses found in *Ideas I* concerning the constitution of transcendent objects, the relationship between the phenomenologically reduced *Körper*-phenomenon and the transcendent *Körper* in nature is pretty much the same, as in the case of any other phenomenologically reduced object as a *noema* and its transcendent physical correlate. Namely, according to Husserl, at the *core* of the objective sense (*gegenständlicher Sinn*) of a certain phenomenon there is the “*determinable X*” that connects the subjective aspect of a particular thing directly to its objective transcendent aspect in an *a priori* necessary fashion (Husserl, 1983, 313–316).

And, in his view, the conception of the “*determinable X*” is not a peculiar “proof of the external reality”; rather, it is meant to be a phenomenologically accurate description of *how the sense of the external, mind-transcendent, objective and physical reality is constituted*.

³³ One can mention that Husserl’s notion of “*empirical necessity*” could serve as a bridge between ideal and motivated (empirical or real) possibilities (Husserl, 1983, 14–15, 103). “*Empirical necessity*” in Husserl’s view is both characterized by the contingency of empirical facts and partially by the necessity of eidetic vision. To this see also: (Tengelyi, 2014, 171–191; Breuer, 2017).

Against this backdrop, we can imagine an ego without a real, actual physical body—like a ghost. Or, we can imagine a “conscious locomotive,” the possibility of which was mentioned by Husserl in *Ideas III* (1980, 104). Furthermore, we can imagine a completely functional body, an animate, living organism, who—despite her fully and perfectly functioning nervous system—does not have conscious experiences, like Chalmers’ *zombies* (Chalmers, 1996). These ideas, based on the previously mentioned distinctions, could be conceived of as ideal possibilities. It also seems that our knowledge of the mind-body connection and the relationship between sensory experiences and particular neural functions and processes is based on empirical research. Consequently, the relationships between mind and body, sensory experience and neural functions and processes are ultimately *empirical* and *contingent*: we associate a certain conscious state with a certain neural process and state based on *an empirical, real, and motivated possibility*. We can always imagine that a certain neural process results in a different sensation or conscious state than it regularly does. The real question is whether we can *truly imagine* these things.

Here I would like to propose a *relativization* of this distinction between ideal and real or motivated possibilities. This “relativization” means that a closer analysis of the phenomenal and phenomenological microstructures of motivated or real possibilities could show *ideal moments and features* in the constitution of such possibilities. Moreover, it could turn out that the motivated possibility in question from a certain point of view could be considered as ideal. In the context of our present study, I choose to base this ‘relativization’ of ideal and real or motivated possibilities on Husserl’s idea of “*double phenomenological reduction*” (cf. Husserl, 2006a; Tengelyi, 1998). In Husserl’s view, under *phenomenological reduction*, we must exclude all “transcendent knowledge” and exclusively focus on what is evidently given in immanent experience (cf. Husserl, 1999)³⁴. Husserl introduced and elaborated this idea of “double phenomeno-

³⁴ To be precise, Husserl spoke about two forms of transcendence in his lecture on *The Idea of Phenomenology*. Namely, the transcendence of the *real*—in relation to the purely immanent—and the transcendence of the *ideal* or general—in relation to the individual. In Husserl’s opinion, although the ideal or the general in a certain way transcends the individual, it could still evidently be given under the phenomenological reduction, as the evidently intuitable general features of individual phenomena and their connections (cf. Husserl, 1999, 37–38, 41–42). There are phenomenologically reduced general or ideal objects (“eidetic” forms, “*eide*”), but as we make progress in our phenomenological analyses, we are forced to incorporate elements of transcendent knowledge into the eidetic research. With this we arrived at the second important point of this remark.

The Idea of Phenomenology (1907) was originally introductory lecture to *Thing and Space* (1907), in which the phenomenological method was already used in a methodologically fully conscious and systematic way. In the phenomenological analyses of the body and the *Leib-Körper* relationship conducted in this lecture, Husserl consistently and steadily rejected using any transcendent

logical reduction” in his 1910/11 winter semester lecture, *The Basic Problems of Phenomenology*. Guided by this idea, we implement a simple phenomenological reduction *first* on what is *originally posited as something transcendent* and existing outside of our minds, which is thus reduced to *a transcendental phenomenon* constituted by our consciousness. Then, in a following step, we execute *a second reduction on the transcendently reduced phenomenon* in order to gain back *its immanent content, its pure meaning*, which we can thus use in a phenomenologically legitimate manner. Husserl used this method to enable him to speak intelligibly of *other minds, of intersubjectivity* under phenomenological reduction (Husserl, 2006a), although this method is also clearly applicable to empirical knowledge about the world, and natural scientific knowledge in particular.

Husserl apparently used this method in *Ideas II* (1989a), and also in *Studien zur Struktur des Bewusstseins* (2020)³⁵, when speaking about the role of the *nervous system*³⁶ in the constitution of concrete consciousness and in the realization of *the soul’s psychological dependency on the body*. Of course, “double reduction” is not a magic wand that you could use on anything under phenomenological reduction to make it something valid and real—thus making miraculously legitimate things like dragons, fairies and wraiths from a phenomenological perspective. Things that involve transcendent knowledge about the world could only have limited and hypothetical validity in the phenomenological attitude. A scientific hypothesis or theorem, however, which enjoys the support of the relative or absolute majority of a scientific communi-

knowledge about the body, although he refers sometimes to empirical, natural scientific research on the body. Nevertheless, he emphasizes his investigations have nothing to do with experiential inquiries and empirical studies, but only relate to what is purely and evidently given in immanent experience, under the phenomenological reduction (Husserl, 1997, 117–119, 136). He accentuates that he speaks about phenomenal-phenomenological and *not* causal and empirical relations. In the concluding parts of the lecture, however (1997, 247–253), at least in my reading, he makes several remarks that indicate the possibility of reinterpreting empirical knowledge in a phenomenological manner (1997, 251). (“The force that grounds Being grows in the course of experience, with respect to its advancing rationalization, in the form of an experiential science which secures for every exception its reintegration under a rule and coordinates to every not-being a semblance that pertains to Being. In this way the force of the experience that constitutes the world grows to such an imposing potency (and this is a rational potency) that the possibilities which work toward the not-being of a real world constituted with strict lawfulness and unity in the nexus of appearance, and always determined ever more completely, precisely become empty possibilities—not meaningless, but irrational and baseless ones.”). These hints, in my view, point towards his later conception of the “double reduction.”

³⁵ See: (Husserl, 2020, 47, 52, 57, 60–64). These pages are from 1909/10—approximately the same time as the publication of *The Basic Problems of Phenomenology* (Husserl, 2006a).

³⁶ More about this in the following subsection.

ty, reflects intersubjectively general knowledge of the research community concerning the mind–transcendent empirical and physical world, and, in a properly careful and circumspective manner, could be also used in the phenomenological attitude with relative and *conditional* validity. This, in turn, imposes on the phenomenologist the task of searching for pathways that connect the *meaningful or purely semantic core* of the theorem in question with *what is directly given in experience*; if this is possible, *the conditional evidence can be gradually transformed into absolute and apodictic evidence*.

For Husserl, a consciousness or a single conscious experience cannot be conceived of as concrete without conceiving of it as the experience of an embodied, intersubjective, practical subject in the world, (cf. Husserl, 2008a, 251–258, 2012, 380; Zahavi, 1994, 1996, 2003)³⁷. This “abstractness” means that we lack the full constitutive meaning of a conscious experience or event, or even consciousness as such in its entirety, *if we abstract from its indications* of embodiment, intersubjectivity and its worldly surroundings. Husserl believes that close analysis of the microstructure of experience can unfold many different, interrelated indications of our bodily, intersubjective being in the world, and that *if we do not follow these indications, we simply will not grasp the full constitutive meaning* of conscious existence, nor the meaning of single, specific individual experiences.

Husserl, especially in his late period (the 1930s), was very determined that the full constitutive meaning of being a subject—even in the transcendental sense—implies having a body in the world, an intersubjective community and a history (cf. Husserl, 1973c, 361–386; Tengelyi, 2014, 184–187)³⁸. The structure of the ego’s self-constitution has

³⁷ As we noted in an earlier footnote 26, “concrete consciousness” should be conceived in a narrower and wider sense in Husserl. The narrower sense refers to an actual state of one’s conscious being—the entirety of one’s mental sphere, with all its specific contents, structures, and organic relations. The wider meaning refers to a coherent set of mental structures which makes a concrete conscious, embodied being in the world possible. In our interpretations, both meanings are implied in Husserl’s conception of concrete “monadic subjectivity,” as presented in the 1920s and afterwards.

³⁸ At this point we would like to refer to our earlier footnote 7, where we examined certain details of Husserl’s theory of self-constitution, its possible interpretations, its relationship to the opposition of transcendentalism and naturalism, and Husserl’s strong anti-naturalistic commitment. At first reading, Husserl’s analyses on the body might appear as parts of a descriptive-eidetic investigation aimed at the empirical domain rather than the transcendental. This is, however, at least in my opinion, and especially in the context of texts that were written after 1920, *an illusion*. We should make two important remarks. Firstly, as said earlier (in footnote 26), from the beginnings of the 1920s Husserl started to work intensively and systematically on the details of his “genetic phenomenology,” which aimed at the *a priori* laws and principles of experiential genesis (cf. Husserl, 2001). With this achievement, boundaries between transcendental and empirical, eidetic and factual, transcendental and empirical essence became *more flexible than ever*. Husserl gained more methodological means to reinterpret empirical knowledge and essences that related to the empiri-

both variable—in fact, an infinite number of variable—and also invariable elements³⁹. The concrete process of self-constitution relates to the *eidōs* of the ego. The process also depends on the species and, ultimately, the fundamental type of subject—whether it is a rational or a non-rational animal subject. The specific subject and her specific way of self-constitution is a weave or fusion of variable and invariable components. According to Husserl, the subject is necessarily an embodied being *even at the lowest level*⁴⁰, and there are only certain *a priori* necessary ways in which she can access the world at all. From a Husserlian perspective, this conception also implies that the immanent aspect of our subjective capabilities and achievements could be connected to their bodily (*leiblich*) aspect within the sphere of immanence, and this latter—the bodily (*leiblich*) carrier and realizer of our subjective capabilities and events in the immanent realm—to a transcendent, objective, and physical bodily basis. It also follows from Husserl’s thoughts that *this could be shown in the case of every particular subjective capability and event*. In the next subsection, we try to show exactly how this can be accomplished.

4.3. The Role of the Nervous System in the Constitution of Our Concrete Embodied Being: An Internal Theoretical Vehicle for Bridging the Explanatory Gap

Husserl deals with the problem of the nervous system from a phenomenological perspective in a detailed way in at least two texts: *Ideas II* and *Studien zur Struktur des Bewusstseins* (Husserl, 1989a, §63, 302–310; 2020, 47, 52, 57, 60–64). This might seem surprising because the nervous system is a transcendent entity that does not belong to

cal domain in a phenomenologically legitimate way, *within the transcendental realm*. The second point is strongly connected to the first and it relates to *Husserl’s fundamental revision of the notion of transcendental ego*. Earlier, in 1912, when Husserl was working on *Ideas I-III*, the transcendental subject was a pure, formal, empty, logical pole, to which acts and experiences were related as their origin or zero point. Back then the transcendental ego was “without any hidden inner richness” (Husserl, 1989a, 111). It changed drastically in the 1920s, as Husserl started to elaborate his notions of concrete monadic subjectivity and transcendental person, which were transcendental concepts, and *which also implied structures of embodiment in a transcendental manner and meaning*.

³⁹ Cf. (Husserl, 1989b, 9–10): “Whether man has empirically constructed organs of perception, eyes, ears, etc., whether two or x eyes, whether these or those organs of movement, whether legs or wings, etc., is completely out of the question, undetermined and open in principle to considerations, such as those of pure reason. Only certain forms of corporeality and mental spirituality (*seelische Geistigkeit*) are presupposed and considered; it is a matter of consciously conducted scientific research into essence to highlight them as *a priori* necessary and to fix them conceptually.”

⁴⁰ Elsewhere, I tried to show what a minimal subject would look like from the Husserlian perspective (Marosan, 2022).

the immanent sphere of consciousness, but rather to the transcendent realm of nature. It may seem that a phenomenologist would have excluded it through phenomenological reduction. Husserl, however, as we saw in the previous section, found ways to bring it back into accordance with the phenomenological attitude in a manner that he thought phenomenologically legitimate.

The key concept to understand the phenomenological role of the nervous system in the philosophy of Edmund Husserl is the *notion of organ* (cf. Claesges, 1964). For Husserl, as mentioned previously, the body—even from the subjective point of view, under the phenomenological reduction and within the realm of immanence—is constituted as a composite system of bodily parts—that is, of different organs. These organs enable certain activities by the ego; they render it capable of actually undertaking certain actions in the world. I walk with my feet, I grasp with my hands, I taste with my tongue, and “I see with my eyes” (Husserl, 2008a, 616), says Husserl. These organs, Husserl asserts, grant the ego access to its environment; they integrate the ego in a particular way into the world. A concrete bodily structure, a specific composition of bodily organs and their internal constitution *reflect a specific way of life in the world*. Like the body as a whole, each individual organ is also constituted as *a unity of internal and external aspects*. Our organs have subjective and objective, externally appearing, and—ultimately—physical aspects. There is a peculiar way in which we feel them on the inside and in which they appear on the outside.

According to Husserl, there exists a peculiar organ with a very specific functional role, one that he calls the “central organ” (Husserl, 1989a, 304). Its special task is to realize the “psychophysical dependency of the soul on the body” by connecting the subjective aspect of our body to the objective side (cf. Yoshimi, 2010). This organ *is the nervous system, and the brain in particular*. In Husserl’s view, the functional role of the nervous system is *to coordinate and harmonize the functioning and activity of every other organ* and to connect the ego to its body, and through that to the world. For him, it is not the peculiar material composition—the “stuff”—that is interesting in the nervous system—that would be rather awkward from a phenomenological perspective—*but rather its functional role: its constitutive meaning in the constitution of the body*.

In Husserl’s view, this is pertinent to the self-constitution of the ego in that the latter constitutes its bodily existence by means of a “central organ” that connects the soul to the body, and that coordinates organic functions and the functioning of sensory organs in particular⁴¹. Because the nervous system connects certain bodily organs

⁴¹ Although Husserl did not say that this “central organ” pertains to the *essence* or *eidos* of a concrete bodily subject, nevertheless, I would venture the assumption—on Husserlian grounds—that this

to the soul and grants access to the ego to the world, it could be also conceived of as a *functional architecture* or *skeleton*⁴² that reflects a concrete bodily being-in-the-world⁴³ of the subject: her specific way of life. This functional architecture or “skeleton” could also be conceived of as a *complex eidetic structure of the peculiar way in which the organism in question is connected to the world or communicates with it*. This complex eidetic structure has *different parts and components* that could be relatively independent topics of eidetic analysis on their own⁴⁴. The bodily parts and organs,

“central organ” belongs to the self-constitution of an embodied conscious subject with *essential* or *eidetic necessity*.

This, however, raises the question of whether we can imagine a conscious being without a nervous system. In the previous subsection, we saw that if we consider ideal possibilities, it is an option to separate consciousness or conscious capabilities from the actual bodily organization of living beings, and to connect consciousness—in imagination—to e.g. a locomotive (Husserl, 1980, 104). And, in fact, on the one hand Husserl eventually does speak about “plant monads,” “unicellular monads” (where the Leibnizian term “monad” refers to the “full concretion of the ego” (Husserl, 1960, 67–68)) (cf. Lee, 1993, 225–230). On the other hand, the philosophical standpoint of “biopsychism,” according to which the phenomenon of life and consciousness are overlapping realms, and every living being has a certain sort of consciousness of its own, is a real, existing position (more recently, see: (Thompson, 2022)).

We, however, would prefer to refer to the “relativization” of the Husserlian distinction of ideal and real possibilities that we proposed in the previous section. Namely, we believe that a closer phenomenological analysis of empirical “real” and “motivated” possibilities could disclose elements of a deeper necessity within them, such features that we could grasp as a form or elements of an *ideal necessity*.

So, we can, of course, imagine that there are conscious beings who do not actually have a nervous system—or living beings below the level of animals, such as plants, fungi, or bacteria, that possess a certain sort of consciousness (as Evan Thompson believes, or authors such as Lynn Margulis or Henri Bergson before him). However, even in these cases—if we stick to the Husserlian approach—we must assume that there must be certain bodily parts in the organism that play the role of this “central organ,” which coordinates and harmonizes the functioning of other bodily organs and realizes the “psychophysical dependency of the soul on the body.”

⁴² My phrasing, not Husserl’s.

⁴³ Sometimes, Husserl also used this Heideggerian term in his late period (cf. Husserl, 2008a, 462, 490).

⁴⁴ In this regard, on Husserlian grounds, I would respectfully disagree with the opinion of certain radical proponents of embodied cognition, according to whom *the specific material constitution is essential for the realization of consciousness* as such. This is to say that according to these authors, an organism or a material system in general is rendered capable of conscious activity specifically due to certain material components in its organization (cf. Fuchs, 2021; Shapiro, 2004). For a critical account of this view see: (Clark, 2008). Such views are partly directed against the idea of artificial intelligence, or in this particular context: *artificial consciousness* (esp. Fuchs, 2021, 13–48), and, strongly related to this, against the conception of the multiple realizability thesis (cf. Putnam, 1967), which posits that one and the same mental state or process could have different physical

alongside their related neural structures, which render us capable of carrying out certain bodily and conscious activities in the world, such as sensory perception, could be treated as co-dependent and—in a thematic regard—still relatively independent moments of this eidetic complexity that mirrors the functional architecture of the living being in question. Related to the whole eidos of the creature's functional organization, the bodily parts, with their joined neural subsystem, also have their own eidetic sub-structures.

Based upon what we have said in the previous subsection, from a Husserlian perspective, there is the possibility of clarifying and integrating empirical knowledge about the functioning of the nervous system under phenomenological reduction, to use the purely semantic core of such knowledge in a hypothetical manner and to look

causes. For artificial intelligence developers, it is an important idea because it enables attaching the capability of consciousness to robots, even if they are composed of different matter than us, if they can be conceived of as functionally equivalent to us. Radical proponents of embodied cognition, in contrast, would prefer to delimit the capability of consciousness to organisms of a specific material constitution (cf. Gallagher, 2011). They believe that matter is an important factor in the realization of consciousness. (It should be noted that radical proponents of embodied cognition oppose the “multiple realizability thesis” in so far as it completely separates particular mental content from the particular matter that realizes that content.)

In this respect, the following should be noted. Under phenomenological reduction, from an eidetic attitude, we can—of course—also consider the particular causal powers and capabilities of different types of matter, such as iron, copper, oxygen, hydrogen, nitrogen, carbon, sodium, calcium etc. We can legitimately analyse them from a phenomenological point of view, as I tried to show in the previous section when I was speaking about “double phenomenological reduction” and how it might help us to use “transcendent” and empirical knowledge under phenomenological reduction in a valid, phenomenologically acceptable way. We can also describe—still under phenomenological reduction—how different types of matter and their causal interactions facilitate or enable the realization of certain bodily functions and how they contribute, with their specific materiality, to the functional architecture of a living being.

I believe, however, in a phenomenological and, more particularly, Husserlian regard, that we should first and foremost rely upon *the peculiar way of communication* between an organism and her environment and, specifically, the eidetic structure or features of that peculiar way. Moreover, from a phenomenological perspective, if a living being is organized as a conscious being, it has the functional architecture of a conscious being, its functional apparatus supports the realization of consciousness and it communicates with its environment like a conscious being, then it clearly exhibits the eidetic features of the embodiment of a conscious creature, and—again, from a phenomenological viewpoint—it should be considered conscious.

It is, of course, a plausible position even in the phenomenological attitude, that a difference in the material constitution of the living being causes a difference in the phenomenal quality of the conscious experience. But under the phenomenological reduction we have no reason to believe two organisms, who have the very same functional architecture, and one of them is conscious, the other one can't be conscious because it is composed of different matter than the first one.

for ways to connect the hypothetical validity that is immediately given in the phenomenological attitude with apodictic evidence. This means turning the hypothetical, presumptive and limited evidence into apodictic evidence in a slow, processual and gradual way. Through eidetic vision, the phenomenologist should unfold *apodictic features and cores* in available empirical knowledge regarding the functioning of the nervous system and its role in the realization of consciousness and connect these features and cores to the immediately given features of our directly appearing embodiment. This would be an attempt to bridge the explanatory gap in a Husserlian manner, one which would proceed from conscious immanence to external, bodily and physical transcendence⁴⁵.

5. CONCLUSION

In this present article, we wanted to offer a way of approaching the problem of the explanatory gap from a Husserlian perspective. In the first main section, we examined the general outlines of some externally directed strategies to close the gap, and, in the second, we showed some characteristic features of certain other strategies that work with both the external and internal aspects of conscious experience, and which are primarily based on the research project of embodied cognition. In the third

⁴⁵ What would an attempt to turn a motivated and empirical possibility into an ideal one look like? Let us consider the following example: “Tomorrow, the sun will rise.” This seems to be an eminent case of an empirical possibility. Nothing guarantees that the sun will rise tomorrow just as it did today. However, let us take a look at this sentence: “The sun remains in its place and the earth rotates 360 degrees around its axis, and we assume that there is no cosmic disaster which would inhibit either of these events”—and someone says that it is still an empirical possibility that the sun will not rise tomorrow. We would say that the person in question just does not understand the semantic content of this sentence. “The sun remains in its place and the earth rotates 360 degrees around its axis, and we assume that there is no cosmic disaster which would inhibit either of these events” means precisely that the sun will rise tomorrow. Of course, a cosmic disaster could always happen—such as an asteroid or minor planet colliding with and destroying our entire planet. However, we restrict ourselves to referring to the formal aspects and implications of the sentence, “Tomorrow, the sun will rise,” which has *a priori* features.

In a related manner, it is possible that a philosophical and scientific analysis of the execution of certain bodily functions that is detailed enough would demonstrate the necessary manner in which the bodily function in question leads to certain conscious experiences. In such a case, when one wants to speak about the ideal possibility of a “philosophical zombie,” according to which the entire causal chain is run through, the bodily function in question is executed flawlessly as it should be, and there is nevertheless no conscious experience, then we should say that the person in question, for whom the possibility of being a “philosophical zombie” is only assumed, simply did not understand what exactly happened to her body.

and final section, we attempted to clarify the elements of a Husserlian-based project that would follow an *inside—outwards direction*, starting from conscious immanence and, from there, striving to reach physical, bodily transcendence, following Husserl’s theory of constitution as our guide, trying to disclose indications in the realm of immanence that refer to transcendent reality—or certain elements, relations, and connections in the transcendent world—in an *a priori* necessary fashion.

A crucial component of our train of thought was that according to Husserl one can only conceive of a particular phenomenon in a concrete manner by considering the wider web of meanings and other phenomena in which the phenomenon in question is embedded. Constitution means to follow the *a priori* necessary connection between phenomena and meanings⁴⁶. Furthermore, it is Husserl’s opinion that certain phenomena, especially those that are connected to perception and the appearance of physical reality, necessarily carry an indication to extra-mental transcendence in themselves. In his eyes, if we abstract from the indication to transcendent reality in those phenomena, we just do not have their concrete, proper meaning, we only have an abstract, inadequate, impoverished aspect of them⁴⁷.

Concerning consciousness as such and ego, Husserl believes that these phenomena necessarily, intrinsically, and in an *a priori* way imply a wide, coherent context of other phenomena. We just do not have their adequate, proper conception without that wider web. For example, we can imagine a sheer visual image without a perceiving subject or visual organs, or we can also imagine an animate experiencing locomotive as Husserl did in *Ideas III* (Husserl, 1980, 104), or a speaking, feeling, experiencing teapot as in Disney cartoons—but in Husserl’s idea these would have just been inadequate conceptions of phenomena that we wantonly ripped out of their wider context. In Husserl’s view, a subjective conscious capability refers to other subjective capabilities: it indicates a whole system of mental structures and abilities. This system refers to a whole way of life in a physical world, and thus also implies *physical embodiment* (*Körperlichkeit*), and not just the experience of embodiment (*Leiblichkeit*). “Concrete consciousness” means that a subject’s mental sphere can only be conceived of as concrete, as an organic, coherent system of mental capabilities, structures, and contents, which refer to their embodied, corporeal aspect, and a concrete way of life in the external, physical world. It is an *illusion* to think that we can grasp an individual mental capability or experience on its own, independently from everything, from

⁴⁶ “*A priori*” here means not only formal *a priori* like “there is no father without at least one child,” but also material *a priori*, so, judgments like “there is no colour without extension” (cf. Husserl, 2002a, II, 134).

⁴⁷ See footnote 32 earlier.

other mental capabilities and experiences, embodiment, and transcendent reality, in a phenomenologically full, adequate and accurate manner. Especially according to the later Husserl, in the 1930s, if we think we did so we did not pay enough attention to the phenomena themselves⁴⁸.

We attempted to show that the self-constitution of the ego, the process through which the transcendental ego conceives and apperceives itself as an embodied, flesh and bone human person in the world, as *a partly empirical and physical entity*, cannot be entirely arbitrary, not even in *a priori* terms. This process has *a priori* necessary features, *which also has certain, distinguishable layers*. The transcendental ego necessarily constitutes itself as an organic subject with an organic body, whose organs enable it to have access to, and to perform different actions in, the world, and the constitution of the organic body also embraces the constitution of a “*central organ*,” whose constitutive role is to coordinate the functioning of all other organs, and integrate them into a coherent system. In Husserl’s opinion, even the constitution of an animate, experiencing subject cannot entirely be contingent.

In this regard, it was of fundamental importance for us how empirical, natural scientific knowledge can be used under the phenomenological reduction, in a phenomenologically legitimate way. Regarding this, we emphasized two strongly related motifs. Firstly, the idea of “*double phenomenological reduction*,” which—in our reading—could be used to phenomenologically clarify and re-integrate empirical findings under the phenomenological reduction. Secondly, we claimed that at a certain point of phenomenological investigations *the difference between ideal and real or motivated possibilities could be relativized*. At first look it might appear that this is a fixed and immovable difference. An ideal possibility is that which does not contain a logical contradiction and could be imagined in general. Such as an experiencing locomotive, a speaking, singing, and dancing teapot, or an experiencing, feeling subject without a body (such as a ghost). A real or motivated possibility is motivated by experiences—such that the sun will rise tomorrow again. The boundaries however, between ideal and real possibilities are not entirely fixed, and especially *genetic phenomenological analysis* could help us revising them⁴⁹. Motivated possibilities could disclose their *a priori*, necessary features under a closer phenomenological analysis, and they could

⁴⁸ In the 1930s it was Husserl’s opinion that we cannot suspend or “put out of play” („*Außer Spiel setzen*“) a whole world-horizon or world-context without re-enacting or re-establishing a new world-horizon or world-context (cf. Husserl, 2008a, 251–258). (“The apodictic certainty of my human-bodily being as part of the apodictic certainty of the Being-foundation of ‘world.’ Rejection of the Cartesian skeptical attempt.”)

⁴⁹ See footnote 38.

reinterpret in a phenomenologically legitimate manner, as having partly ideal moments, *and could partly be considered as ideal possibilities*⁵⁰.

We tried to make it plausible that these considerations could make a substantial contribution to handling the problem of explanatory gap, particularly from a phenomenological viewpoint, in a twofold way. *Epistemologically*, through the internal, immanent analysis of subjective experiences, one can systematically unfold and map the peculiar context of other immanent phenomena and meanings, and one can identify and follow up the indications in these experiences to structures of embodiment and transcendent reality. In this manner, this immanently oriented, Husserlian project could orient empirical research into the essence of consciousness and its bodily basis. *Ontologically*, one can also use Husserl's assumptions on *mind-body relationship*, and one can also articulate a standpoint concerning this latter matter, depending how seriously one takes *Husserl's idealistic commitments*⁵¹. This latter problem, however, is a topic of another study.

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⁵⁰ See footnote 45.

⁵¹ From time-to-time Husserl makes statements that explicitly indicate that Husserl could be considered as a whole-hearted dualist. He speculates about the immortality of the transcendental ego, he refers to the transcendental ego in terms of a “*transcendental substance*,” which is absolutely independent from the material body, and also from physical, natural reality itself. (Husserl, 2006b, 176–177). It would be the topic of another essay to have a closer look at how Husserl attempted to justify such claims.

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