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How Can Searle Avoid Property Dualism? Epistemic-Ontological Inference and Autoepistemic Limitation

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Searle suggests biological naturalism as a solution to the mind-brain problem that escapes traditional terminology with its seductive pull towards either dualism or materialism. We reconstruct Searle's argument and demonstrate that it needs additional support to represent a position truly located between dualism and materialism. The aim of our paper is to provide such an additional argument. We introduce the concept of "autoepistemic limitation" that describes our principal inability to directly experience our own brain as a brain from the first-person perspective. The neglect of the autoepistemic limitation leads to inferences from epistemic properties to ontological features—we call this "epistemic-ontological inference." Searle attempts to avoid such epistemic-ontological inference but does not provide a sufficient argument. Once the autoepistemic limitation is considered, epistemic-ontological inference can be avoided. As a consequence, one can escape traditional terminology with its seductive pull towards either dualism or materialism.

Keywords: Autoepistemic Limitation; Epistemic-Ontological Inferences; Property Dualism; John Searle

1. Introduction

The mind-body problem has been a topic of controversial philosophical discussion for a long time, and still no satisfying solution seems to be available. Every position, be it dualistic or monistic, seems to confront unsolvable problems.

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Searle (1992, 2002) approached the mind-body problem by proposing a so-called "biological naturalism" that, according to him, has to be distinguished from both property dualism and monism. He claims that we suffer from a conceptual confusion that is caused by traditional terminology. In a recent paper, Searle (2002) explicitly argues against property dualism. We will refer to this paper in the following.

The aim of our paper is to show that even though Searle criticizes traditional terminology for causing conceptual confusion, he nevertheless relies on that terminology himself. As a result, his argument is ultimately unpersuasive. We basically agree with Searle's conclusion, but we believe that by approaching the problem differently, we can provide additional arguments that subsequently complement Searle's own arguments and support what can hence be called "biological naturalism."

Like property dualists, Searle defends the irreducibility of the first-person experience of mental states to the third-person observation of physical states. Unlike the property dualist, though, from this irreducibility Searle (2002) does not infer corresponding ontological properties:

> But the impossibility of an ontological reduction in the case of consciousness does not give it any mysterious metaphysical status. Consciousness does not exist in a separate realm and it does not have any causal powers in addition to those of its neuronal base any more than solidity has any extra causal powers in addition to its molecular base. (p. 62)[1]

He suggests that it is the traditional terminology that is causing this conceptual confusion. By contrasting the mental and the physical traditional terminology leads us to the assumption that mental states cannot be part of the physical world in the way that physical states are. However, according to Searle this inference of different ontological properties from the different epistemic properties of first- and third-person perspectives has to be considered a "misconception of the nature of reduction." We call this inference from epistemic properties to ontological features "epistemic-ontological inference."

The question we would like to raise at this point is: Why is the traditional terminology so seductive, pulling us towards either dualism or materialism? Why are we intuitively inclined to establish a terminological and subsequently ontological difference between mental and physical states or first- and third-person perspectives, respectively? We will argue that the traditional terminology used in the philosophy of mind characterizes the first-person perspective mainly by its ability to experience mental states, thereby neglecting an important inability: the inability of directly experiencing our own brain states *as* brain states from the first-person perspective. We call this inability the "autoepistemic limitation" (Northoff, 2004). Our thesis is that the neglect of the autoepistemic limitation by traditional terminology seduces us to make epistemic-ontological inferences, thereby reinforcing our intuitive pull towards dualism or materialism, respectively. At the same time, we hypothesize that the autoepistemic limitation itself provides the necessary condition for the possibility of experiencing mental states from the first-person perspective. By revealing the

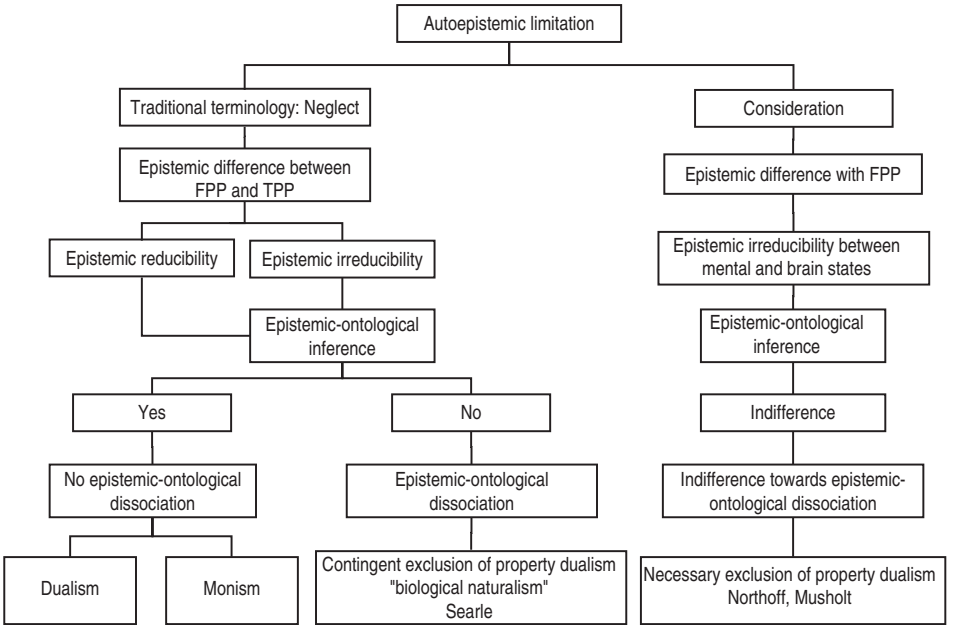

Figure 1. Epistemic-Ontological Inference and the Mind-Brain Problem. The different epistemic presuppositions and their implications for consecutive steps in arguing for a specific mind-brain theory on the ontological level are presented. The main difference between Searle's and our approach is the difference between contingency and necessity. It can therefore be concluded that the consideration of epistemic presuppositions has consequences for the argument on an ontological level.

neglect of the autoepistemic limitation as the actual source of the conceptual confusion caused by traditional terminology, we subsequently provide a complementary argument for Searle's position. We conclude that the mind-body problem should be considered an epistemological problem rather than an ontological problem (see Figure 1).

The aim of our paper *is not* to argue against dualism or materialism.[2] Rather, we want to show that by taking into account what we call the autoepistemic limitation, we can provide an additional argument lending further support to Searle's position of biological naturalism. We claim that considering the autoepistemic limitation contributes to establishing biological naturalism as a truly intermediate position between materialism and dualism, thereby escaping the seductive character of traditional terminology with its pull towards either dualism or materialism.

2. Epistemic-Ontological Inference and Searle's Rejection of Property Dualism

Searle (2002) presents an argument against property dualism that we will reconstruct in four different steps.

2.1. The Epistemic Difference Between Mental and Physical States

The first step in Searle's argument consists in the mere description of mental and physical states. Here, Searle is in agreement with property dualism. According to both biological naturalism and property dualism, physical states are publicly accessible and can be described as outer and objective. In contrast, mental states are only privately accessible and can thus be described as inner and subjective. Therefore, the difference between mental and physical states refers to the different perspectives from which they are accessible, namely, first- and third-person perspectives. This can consequently be characterized as an epistemic difference that should be reflected upon in terms of "first- and third-person epistemology" (see also Northoff, 2004) rather than, as Searle (2002) does, in terms of "first- and third-person ontology" (p. 60). Since the difference between the first- and third-person perspectives refers to the way in which each perspective provides access to certain properties, it should be regarded as an epistemic difference. The experience of mental states from the first-person perspective is different than the observation of physical states from a third-person perspective. However, this does not tell us anything about the underlying ontological differences of mental and physical states. Therefore, the term 'first- and third-person ontology' used by Searle in this context is misleading.

2.2. The Epistemic Irreducibility of the First- to the Third-Person Perspective

The second step of the argument concerns the question whether mental states can be reduced to physical states. Still, Searle and the property dualist are in agreement, claiming for an epistemic irreducibility between mental and physical states. Since first-person epistemology cannot be reduced to third-person epistemology, mental states cannot be reduced to physical states either. This irreducibility in epistemological regard, which we in the following will refer to as "epistemic irreducibility," characterizes both Searle's and the property dualist's approach, as reflected in the following quotation:

> What is the difference between consciousness and other phenomena such as color and solidity? The difference is that consciousness has a first-person ontology [i.e., in our terms, first-person epistemology]; that is, it only exists as experienced by some human or animal, it cannot be reduced to something that has a third-person ontology [i.e., in our terms, third-person epistemology], something that exists independently of experiences. It is as simple as that. The property dualist and I are in agreement that consciousness is ontologically [i.e., in our terms, epistemically] irreducible. (Searle, 2002, p. 60)

When Searle speaks of "existence" here, he means that consciousness only exists as long as there is a subject that is in a conscious state. Therefore, consciousness does not exist independently of an experiencing subject. Nevertheless, again, we think that this terminology is misleading in the present context, since it rather reflects the difference between experiencing mental states from a first-person perspective and observing physical processes or facts from a third-person perspective. Thus, it refers to the way in which certain states are accessible. Indeed, Searle later on rejects the

conclusion that mental states are metaphysically different. In order to avoid confusion, we suggest using the term 'epistemologically' for what Searle names 'ontologically' and reserving the term 'ontologically' for what Searle names 'metaphysically' in this context.

While materialists might still agree with the first step of the argument, namely the difference between mental and physical states, they disagree with the second step. Materialists, as Searle characterizes them, claim the epistemic reducibility of mental to physical states: they ultimately reject a genuine right of a first-person perspective to be distinguished from a third-person perspective.[3]

2.3. Epistemic-Ontological Inference

While both Searle and the property dualist agree on epistemic irreducibility, they disagree on what follows from this ontologically. The property dualist claims that if mental and physical states are different and irreducible epistemically, there must be corresponding ontologically different and irreducible properties. We call this inference from different and irreducible epistemic characteristics to corresponding ontologically different and irreducible properties an "epistemic-ontological inference."

In contrast to the property dualist, Searle rejects this epistemic-ontological inference. Epistemic irreducibility does not justify the assumption of corresponding ontological properties; an epistemic difference does not entail an ontological difference:

> The key points of disagreement are that I insist that from everything we know about the brain, consciousness is causally reducible to brain processes; and for that reason I deny that the epistemic irreducibility of consciousness implies that consciousness is something "over and above," something distinct from, its neurobiological base. (2002, p. 60)

According to Searle, the property dualist is tempted to make epistemic-ontological inferences because he is trapped in traditional terminology:

> Why are we inclined to make this mistake for consciousness when we would not think of making it for other causal phenomena? I think the answer is obvious. Because the traditional vocabulary tells us that the mental and the physical are two distinct ontological categories and because consciousness is not ontologically [according to us: epistemologically] reducible to its neuronal base, we suppose that it is not part of the physical world, in the way that other phenomena are. That is the deeper mistake of property dualism. And that is precisely where I part company with the property dualist. (2002, p. 62)

By rejecting epistemic-ontological inference, Searle presupposes the possibility of dissociation between epistemic characteristics and ontological properties. We call this the "epistemic-ontological dissociation." According to this assumption, epistemic dualism is compatible with ontological monism. Such epistemic-ontological dissociation distinguishes Searle's position from both property dualism and materialism. Both positions preclude dissociation between the epistemic and

ontological realms. Instead, both the property dualist and the materialist make the opposite presupposition. Based on the epistemic-ontological inference, the property dualist claims that irreducible epistemic differences must be reflected in irreducible ontological differences. Likewise based on the epistemic-ontological inference, the materialist has to reject the epistemic irreducibility of mental to physical states in order to avoid the assumption of different and irreducible ontological properties (see Figure 1).

2.4. Ontological Determination of the Brain

This last step of the argument against property dualism regards the ontological determination of the brain by mental as well as physical properties.

Since the property dualist accepts both mental and physical states and, at the same time, associates mental states with the brain, he attributes mental as well as physical *properties* to the brain. Though Searle attributes mental states to the brain as well, he does not claim for mental properties that are opposed to the physical properties of the brain, because he rejected the epistemic-ontological inference. Thus, Searle and the property dualist characterize the brain differently ontologically:

> I say consciousness is a feature of the brain. The property dualist says consciousness is a feature of the brain. This creates the illusion that we are saying the same thing. But we are not.... The property dualist means that in addition to all the neurobiological features of the brain, there is an extra, distinct, non-physical feature of the brain; whereas I mean that consciousness is a state the brain can be in, in the way that liquidity and solidity are states that water can be in. (2002, p. 61)

We think that Searle is right in rejecting what we call the epistemic-ontological inference, and we agree that it is the traditional terminology that inclines us to make such an inference. Searle, though, fails to address the question why the traditional terminology is so appealing to our intuitions, thereby trapping us in thought patterns that make either dualism or materialism seem to be the only alternatives. In the following, we will address this question by stepping behind Searle's argument.

3. What is the Autoepistemic Limitation?

No one has ever directly perceived the neuronal states in her or his own brain *as* neuronal states. We can directly perceive things outside our own brains such as environmental events. In contrast, our own neuronal states, and thus our brain as the underlying vehicle of our perceptions, remain hidden. We have no *direct* access to our own brain as a brain from the first-person perspective. We can only conclude that we do have a brain from the third-person perspective (e.g., through observation of our brain using imaging techniques).[4] The first-person perspective should therefore be characterized by both an ability as well as an inability: While we are able to experience mental states from the first-person perspective, we remain unable to experience our neuronal states as such. We call this inability of the first-person perspective to experience our brain *as* a brain the "autoepistemic limitation."[5]

It is important to note that the fact that we remain cognitively unable to directly access our neuronal states as such does not imply any assumptions about their ontological status.[6]

3.1. The Phenomenal Autoepistemic Limitation

Unlike other organs, the brain cannot be integrated into our body schema. Even though we do not perceive the physical states in our body—e.g., the gastric acid in our stomach, the electric processes in our heart, or the energetic metabolism in our muscles—we do perceive the body and its organs in a phenomenal way. The body as a whole is experienced phenomenally in terms of what is called the body image: ''The final result, a mental construct that comprises the sense impressions, perceptions, and ideas about the dynamic organization of one's own body and its relation to that of other bodies, is variously termed the body schemata, body image and corporeal awareness'' (Berlucchi & Aglioti, 1997, p. 560; see also Melzack, 1989, 1992). The body image does not reflect the ''physical body'' but the way we perceive our body; one could therefore speak of the ''phenomenal body.''[7] However, we lack phenomenal perception of our own brain. In contrast to other organs, we do not say ''My brain hurts,'' ''My brain aches,'' etc. Even in case of a migraine headache, we rather speak of a ''headache'' than a ''brainache.'' We call this inability to directly phenomenally perceive our own brain as a brain from the first-person perspective the ''phenomenal autoepistemic limitation.'' It may be traced back to the lack of an interoceptive sensory system for the brain.

In contrast to other bodily organs, the brain has no sensory system that allows for continuous scanning of its activity. Subsequently, there is no interoceptive sensory information from our brain; the brain remains spared from the phenomenal experience of our body. In phenomenal terms this means that we have no subjective experience of our brain from a first-person perspective.

3.2. Empirical Mechanisms Underlying the Phenomenal Autoepistemic Limitation

At this point, the question of the empirical mechanisms underlying the phenomenal autoepistemic limitation arises. Since we hypothesize that the autoepistemic limitation is characteristic and probably even functionally inevitable for our brain, empirical evidence, or counter-evidence, respectively, should be found. In order to investigate the underlying empirical mechanisms of the phenomenal autoepistemic limitation, neuroscience would have to focus not only on the neuronal states that correlate with mental states, but also on those neuronal states and their functional organization that prevent us from directly perceiving them as such (see Northoff, 2004, and below). We want to stress though, that even by doing so, neuroscience can only help in gathering evidence for the concept of the autoepistemic limitation. Neuroscience is tied to the third-person perspective and remains therefore in principle unable to avoid the phenomenal autoepistemic limitation.

Nevertheless, there are now possibilities to *indirectly* perceive one's own neuronal states as such. For example, currently available technical devices open the way for

online observation of our own neuronal states. Some of these provide online feedback via so-called brain-computer interfaces (BCI): Using BCI, Birbaumer, Hinterberger, Kubler, and Neumann (2003) were able to demonstrate that subjects could learn to modulate the signals in functional magnetic resonance imaging (fMRI), i.e., BOLD signals of their own brain, by performing a mental task. Similarly, subjects with paralysis caused by amyotrophic lateral sclerosis (ALS) or locked-in-syndrome can learn to ''read'' and modulate their own neuronal states presented to them online via imaging signals (EEG, fMRI). In the future, brain-computer devices may enable these patients to communicate with others (Neumann, Kubler, Kaiser, Hinterberger, & Birbaumer, 2003) and/or to move neuroelectric prostheses with their own thoughts (Nicolelis, 2003).

What happens here? The patients perceive their own brain, including its neuronal states (as visualized in the EEG or the scanner), on a screen. This means they subjectively experience their own neuronal states. This is necessary for such devices to function properly. ''Reading'' or modulating one's own brain states presupposes the perception and experience, though *indirectly* via online brain-computer feedback devices, of one's own neuronal states. Accordingly, with the help of these devices these patients circumvent the phenomenal autoepistemic limitation by subjectively or phenomenally experiencing their own brains' neuronal states from the first-person perspective.

However, the access to their neuronal states remains indirect. Therefore, even these devices cannot resolve the phenomenal autoepistemic limitation.[8]

3.3. The Physical Autoepistemic Limitation

In addition to phenomenal autoepistemic limitation, we also ''suffer'' from a *physical* autoepistemic limitation. We can neither perceive the neuronal activity of our brain from the first-person perspective, nor can we perceive any other physical processes, like the metabolism in our muscles, electric processes in our heart, clearance processes in our kidneys, etc. The only way of perceiving physical processes is to observe them via technical mediation, thus from a third-person perspective. The physical autoepistemic limitation seems to be characteristic of our biological design and our mode of sensory processing. Our sensory processing simply does not allow direct perception of physical stimuli as such.

Though we ultimately remain unable to know the origin of the physical autoepistemic limitation in full detail, we at least want to develop a hypothesis. One essential requirement for such a hypothesis is that it reveals how the physical autoepistemic limitation is linked to subjective experience. We suggest that the very same mechanisms that prevent us from accessing our own brain and body's physical states allow us to have subjective experiences from the first-person perspective. How can we explain the linkage between the physical autoepistemic limitation and subjective experience from the first-person perspective in epistemic terms? Experience of mental states is essentially subjective experience because its information is related to the respective person having the experience (in other terms: the self).

This contrasts with information of physical states that remains independent of the self. Pending any possible ontological difference, the crucial epistemic difference between physical and mental states must be assumed to consist in the relation to our self: Once physical states are related to the self, they seem to become inaccessible as physical states from the first-person perspective and are consequently subjectively experienced as mental states. If this is true, epistemically, the relation to the self lies at the very bottom of the physical autoepistemic limitation and its linkage to subjective experience from the first-person perspective (see also Northoff, 2004).

3.4. Empirical Mechanisms Underlying the Physical Autoepistemic Limitation

What is the empirical process allowing for the relation of physical states to one's own self? We suggest that what recently has been called self-related processing in cognitive neuroscience (Kelley et al., 2002; Northoff & Bermpohl, 2004) is the empirical mechanism that accounts for relating physical states to the own self.

Self-related processing concerns both interoceptive stimuli of the own body (but not those of the brain because these remain absent; see above) and exteroceptive stimuli from the environment. For example, Kelley et al. (2002) investigated self-related stimuli in a trait-adjective judgment task. In this study, participants were asked to judge trait adjectives (e.g., 'polite') as to whether they properly described the participants themselves (self-referential), the current U.S. President (other-referential), or a given case (case-referential). Self-related processing may not only concern verbal stimuli but also those from other domains, e.g., autobiographical, emotional, motor, and facial stimuli (see below and Northoff & Bermpohl, 2004). Finally, it should be noted that the self-relevance of a stimulus is not intrinsic to the stimulus, but rather determined by the individual's brain processing and the personal and environmental context in which it is perceived.

Most importantly, self-related processing[9] results in subjective experience of that particular stimulus from the first-person perspective (Northoff & Bermpohl, 2004). The particular stimulus is experienced as "mine"; Lambie and Marcel (2002, p. 247) speak of an "addition of the 'for me' by means of which that particular stimulus becomes 'mine' and results in 'mineness'" (see also Metzinger, 2003).[10] We assume that "mineness" is essential for generating subjective experience or, as Lambie and Marcel (2002) put it, for "what makes something informational or neurophysiological into something phenomenological." This results in what has been termed "first-order awareness" as "a component of awareness or phenomenal experience" (Dalgleish & Power, 2004; Marcel & Lambie, 2004). Accordingly, "mineness" reflects the relation to the self that is accompanied by transforming physical states into phenomenal states, resulting in subjective experience.

Summing up, we assume that, epistemically, the relation to the self and its underlying empirical mechanism, self-related processing, provide the missing links between the physical autoepistemic limitation and the subjective experience from the first-person perspective. Self-related processing enables stimuli to be subjectively experienced from the first-person perspective. However, at the same time, this makes

it impossible for us to experience our own brain and body's physical states as physical states, resulting in the physical autoepistemic limitation. We therefore believe that both the physical autoepistemic limitation and subjective experience can be traced back to the same underlying epistemic concept, relation to the self, and accordingly to the same empirical mechanism, self-related processing.

3.5. A World Without the Autoepistemic Limitation

Note that by saying that we ''suffer from a limitation'' we do not mean to say that we would be better off without it. ''Autoepistemic limitation'' represents a mere descriptive level of the specific design features of our epistemic apparatus. In fact, we believe that the design of our epistemic apparatus, including the autoepistemic limitation, provides the necessary condition for the possibility of the way we experience and gain knowledge of ourselves and of the world. We would simply not function properly and could thus not act in a goal-oriented manner within our environment if we were not prevented from directly perceiving our own phenomenal and physical brain properties as such (Northoff, 2004).

This raises the question of whether we are able to imagine organisms without the autoepistemic limitation at all because we, as philosophers, are subject to the autoepistemic limitation as well. Can an organism subject to autoepistemic limitation imagine organisms free from the autoepistemic limitation? One of the main problems is that our conceptual system might limit the possibilities of such imagining. Since our concepts are based upon and can ultimately be traced back to the autoepistemic limitation (Northoff, 2004), they might be useless in a world without the autoepistemic limitation. Our entire experience and perception of the world and of ourselves would change in such a dramatic way that we could no longer apply our current epistemic and ontological concepts to this new world. This could make it impossible to speak, e.g., of perceptions or mental states at all in a reasonable sense.

Having proposed the relation of stimuli to the self as the missing link between the autoepistemic limitation and subjective experience from the first-person perspective, one must conclude that an organism without autoepistemic limitation most likely would also lack the ability to relate stimuli to itself. Such an organism would not be able to make a distinction between itself and the world—it would merely process physical stimuli that would be treated all alike. There would be no way of turning the perception of these stimuli into phenomenal experience. At this point, we cannot provide more than a hypothetical outline of such a situation, but it should be quite clear that without the ability to relate stimuli to itself, there would be no subjective experience and thus no mental state at all. In other words, there would be no self at all—neither in a phenomenal (Metzinger, 2003) nor in an epistemic or ontological sense.[11]

It is beyond the scope of this paper to go further into these considerations, since our main aim is to provide an additional argument for Searle's position. However, from what we have stated it should be clear that we consider the autoepistemic

limitation and experience from the first-person perspective to be two sides of one and the same coin, as both can be traced back to the relation of stimuli to the self.

Therefore, the autoepistemic limitation must not be seen as something that has to be overcome—and in that sense, the term may be misleading—but rather as one of the basic features of our epistemic apparatus and thus as a necessary condition for the possible experience of mental states from the first-person perspective.

4. Autoepistemic Limitation and Epistemic-Ontological Inference

Searle rejected the epistemic-ontological inference by claiming that it is the traditional terminology that inclines us to contrast the mental and the physical. However, from this contrast it does not follow that the mental and the physical are distinct ontological categories. We argue that it is the neglect of our autoepistemic limitation (or, as McGinn puts it, of our cognitive closure with regard to property P; see note 4) that actually led to the traditional terminology.

In the following, we want to examine the different steps of Searle's argument again, this time in relation to our argument.

4.1. Epistemic Difference and Irreducibility

Both, the property dualist and Searle, consider the difference between experience from the first-person perspective and observation in third-person perspective as irreducible. We argued that thus one could speak of an epistemic irreducibility here, which can be traced back to a difference between first- and third-person epistemology.

The concept of the autoepistemic limitation suggests locating the epistemic difference at a different level, namely within the first-person perspective itself. We have characterized the first-person perspective by an epistemic inability to perceive brain states *as* brain states and an accompanying ability to experience mental states. We hypothesize that our epistemic apparatus is designed in a way that prevents us from directly perceiving physical processes from the first-person perspective. In other terms: We hypothesize that there is a direct and necessary connection between our ability to experience mental states from the first-person perspective and our inability to directly perceive our own brain states as physical brain states. That is, whenever certain brain states (giving rise to phenomenal experience) occur, we necessarily experience mental states from the first-person perspective and are principally unable to gain access to the brain states *as* brain states.[12] Consequently, we would not have mental states if we were able to directly perceive physical properties from the first-person perspective.

4.2. Epistemic-Ontological Inference

Both the property dualist and Searle start from the epistemic irreducibility of the first-person to the third-person perspective in order to make ontological assumptions.

The property dualist argues that the irreducibility of first-person to third-person epistemology entails the corresponding ontological properties of mental as opposed to physical states. This argument presupposes that the dissociation between epistemic and ontological characteristics is impossible.

Though Searle also uses the epistemic irreducibility between first- and third-person perspectives as his starting point for ontological considerations, he does not agree with the property dualist's inference to the corresponding ontological properties. According to Searle, though being epistemologically different and even irreducible, first- and third-person perspectives might still be associated with the same underlying ontological property.[13] This implies that there is a possible dissociation between epistemological and ontological characteristics.

In contrast to both the property dualist and Searle, we suggest that only one epistemology, namely the first-person epistemology, is critical for our problem. By taking into account the autoepistemic limitation as a necessary condition for the possibility of a first-person perspective, the ontological problem of the relation between mental states and brain states loses its mysticism. The ontological problem becomes an epistemological problem, and by realizing this, the temptation to assume distinct ontological categories loses its power. We no longer deal with either possible or impossible dissociation between epistemological and ontological characteristics because there is no need to make any ontological assumptions.

Our argument, which is based on the assumption of an autoepistemic limitation, contains three different aspects. First, it shows that no assumption about different ontological properties of mental and physical states needs to be made. Searle has to reject the epistemic-ontological inference in order to avoid the assumption of different ontological properties. Since our argument implies that only one epistemology has to be considered here, the rejection of the epistemic-ontological inference is no longer necessary. Therefore, our position remains indifferent to this problem.

Second, and related to this, our argument shows that we do not need to assume different ontological properties, even if the epistemic-ontological dissociation is not considered necessary. In contrast to this, Searle has to regard this dissociation as necessary for his argument to succeed.

Finally, and most importantly, our argument reveals why traditional terminology inclines us to make epistemic-ontological inferences in the first place. While traditional terminology points out the abilities of the first- and third-person perspectives (namely, either the subjective experience of mental states, including qualia, etc., or the observation of physical states thereby leading to objectivity), it neglects the corresponding inabilities. Due to its neglect of our inability to directly perceive our own brain states *as* brain states from the first-person perspective, traditional terminology inclines us to contrast the mental and the physical and to infer corresponding ontological differences. By realizing that autoepistemic limitation is actually a necessary condition of the possibility of a first-person perspective, epistemic-ontological inferences appear in a new light—namely as unnecessary.

Subsequently, we arrive at a position similar to Searle's without the need to make assumptions about epistemic-ontological inferences and/or dissociations. Even though he is criticizing traditional terminology, Searle nevertheless relies on it himself. In contrast, we demystify the ontological mind-body problem by pointing out that it really is an epistemic problem. We can therefore avoid monism as well as dualism without falling back into traditional terminology.

4.3. Ontological Determination of the Brain

Though starting from a different point than Searle—the epistemological irreducibility within the first-person perspective itself rather than between the first-person and third-person perspectives—our argument comes to a similar conclusion: no ontologically different mental properties need to be attributed to the brain.

However, there is an important difference between Searle's and our argument. Even though he does not accept the attribution of mental properties to the brain, Searle cannot completely exclude the (logical) possibility of making such attributions. Since he does not investigate into the cause of the intuitive plausibility of traditional terminology, he cannot completely liberate himself from the suggestive power of this terminology. In contrast, our argument no longer focuses on the epistemological irreducibility between the first- and third-person perspectives, therefore removing the temptation to attribute mental as opposed to physical properties to the brain. Based on the assumption that the experience of mental states from the first-person perspective is, so to speak, the natural (and necessary) expression of certain (physical) brain states that, at the same time, prevent themselves from being experienced *as* such by the subject, there is no reason why there should be any separate ontological mental properties. Accordingly, this argument complements Searle's position by showing that it is neither necessary nor possible to assume ontologically different mental brain states. Since we regard the mind-body problem as an epistemic rather than an ontological problem, we do not need to assume different ontological categories. Even stronger, it would not even be compatible with our argument to assume different ontological categories, since it would require applying different categories to the same perspective.

5. The Autoepistemic Limitation and the Middle Ground Between Materialism and Dualism

Having undermined the ground of property dualism, the autoepistemic limitation allows us to avoid relapsing into what Searle labels materialism. One should however take into account that what Searle means by materialism seems to refer only to eliminative or reductive forms of materialism that do not accept that the first-person perspective has to be distinguished from the third-person perspective. Searle does not seem to consider other, more sophisticated forms of materialism that give the first-person perspective its own due. Since our paper aims predominantly at providing an additional argument for a "biological naturalism" within the context of Searle's

argument, we here adopt his understanding of materialism. One should, however, be aware that our argument would have to be examined anew when being applied to other forms of materialism. Thus, locating biological naturalism in the middle ground between materialism and dualism, based on the autoepistemic limitation, applies only to the chasm between eliminative or reductive materialism and dualism. It might not necessarily apply to the chasm between nonreductive forms of materialism and dualism.[14]

According to Searle (see, e.g., 2002, p. 62), it is because of the common premise of the epistemic-ontological inference that materialism has to claim the reducibility and, consequently, the elimination of the first-person perspective. Like the dualist, the materialist makes the epistemic-ontological inference. Consequently, by admitting the irreducibility of the first-person perspective, he would necessarily have to accept ontologically distinct mental properties. Since he wants to avoid this conclusion, he rather rejects the epistemic irreducibility of the first-person perspective.

We argue that there is no need to make epistemic-ontological inferences. By shifting the focus from the difference between the first- and third-person perspectives to the examination of the first-person perspective itself, we realize that the mind-brain-problem is not an ontological but an epistemological problem, which is based upon the autoepistemic limitation. We do not follow the materialist in trying to eliminate this perspective. We suppose that the autoepistemic limitation is not something that has to be circumvented, but rather it is a necessary condition for the possibility of our experience from the first-person perspective and a fundamental characteristic of our biological epistemic apparatus. This allows us, in concert with Searle (2002), to ''state the truth'' in materialism (i.e., rejecting the assumption of ontologically different mental properties) ''without saying the falsehood'' (i.e., reducing or eliminating the first-person perspective) (p. 62ff). Accordingly, the concept of the autoepistemic limitation complements the ground for Searle's development of his ''biological naturalism'' as a truly ''middle way between property dualism and materialism.''[15] This in turn makes it possible to escape the pitfalls of traditional terminology with its seductive pull towards either dualism or materialism. Accordingly, the concept of the autoepistemic limitation could contribute in establishing alternative, epistemic-oriented, mind-brain solutions beyond the limits of traditional terminology.

Notes

[1] We think that Searle's use of the term 'ontological' is misleading. What Searle refers to as ''the impossibility of an ontological reduction'' is rather the difference between experience and observation of mental and physical states from the first- and third-person perspectives, respectively. We therefore suggest to use the term 'epistemic' for what he calls ontological and reserve the term 'ontological' for what he calls 'metaphysical', namely the status of existence. In the following, we will proceed using the terminology proposed by us.

[2] We are aware of the fact that one cannot, as Searle often does, speak of *the* materialism as opposed to *the* dualism, since there are many very different positions subsumed under these categories. However, since it is not our aim to argue against these positions, we will not refer

in detail to all the different varieties amongst them. For the sake of simplicity of the argument, in this context we will just follow Searle while being aware of the fact that he is often oversimplifying.

[3] Note that, therefore, we want to stress the importance of a distinction between ''difference'' and ''irreducibility.'' Difference, as the materialist would point out, does not necessarily imply irreducibility.

[4] This view resembles McGinn's (1989, 1999) position, which speaks of a cognitive closure (epistemic limitation) with regard to ''property P.'' According to McGinn, ''property P'' is essential for the generation of mental states out of brain states. But since introspection only allows for access to mental states and has no such access to brain states, it remains ''closed'' with respect to ''property P'': ''P has to lie outside the field of the introspectable, and it is not implicitly contained in the concepts we bring to bear in our first-person ascriptions. Thus the faculty of introspection as concept forming capacity is cognitively closed with respect to P'' (1989, p. 355). What McGinn calls introspection is what we refer to as subjective experience from the first-person perspective. The possibility of conceptualising ''property P'' from within the first-person perspective would reflect what we call experiencing the own brain as brain thereby circumventing the autoepistemic limitation.

[5] It is noteworthy that Spinoza expressed a similar idea in his ''Ethics'' (1985, pt. 2, prop. 19–29). He states that ''the human mind does not know the human body itself, nor does it know that the body exists, except through ideas of affections by which the body is affected.'' What he refers to as ''human mind'' may, in the present context, be replaced by ''first-person perspective'' that does not know the body as a body (''the human body itself''), respectively the brain as a brain in our context. Moreover, the ''human mind does not involve an adequate knowledge of the parts composing the body'' (pt. 2, prop. 24). This may in the present context be understood as a lack of experience and knowledge of the own brain from the first-person perspective. A similar position has been expressed by Schopenhauer (1966): ''But in so far as the brain knows it is not itself known, but it is the knower, the subject of all knowledge . . . . On the other hand, what knows, what has that representation, is the brain; yet this brain does not know itself but becomes conscious of itself only as intellect, in other word as knower, and thus only subjectively'' (Vol. 2, p. 259).

[6] See McGinn (1991): ''We confuse our own cognitive limitations with objective eeriness. We are like the Humean mind trying to understand the physical world, or a creature without spatial concepts trying to understand the possibility of motion'' (p. 17).

[7] In phenomenology there is a long tradition of distinguishing between phenomenal and physical body; see, e.g., Merleau-Ponty (1962).

[8] We think that the autoepistemic limitation reflects the structural organisation of the brain functions. Consequently, in order to resolve this limitation a different design of our brain would be required, possibly without feedback-loops and top-down-modulation (see Northoff, 2004).

[9] Self-referential processing needs to be distinguished from sensory processing. Sensory processing describes the processing of stimuli from one's own body and the environment in the various intero- and exteroceptive sensory pathways reflecting different sensory modalities. We assume that self-referential processing builds upon sensory processing, though both need to be distinguished from each other. Sensory processing does not relate stimuli to the own person—there is not yet a distinction between one's own self and others with respect to mere sensory stimuli. One could therefore say that sensory processing is a more basic but necessary requirement for self-referential processing.

[10] ''Minessness'' has also been related to higher cognitive functions (see, e.g., Metzinger, 2003). However, we assume that self-referential processing must be distinguished from higher-order or cognitive processing. Higher cognitive functions like memory, spatial cognition, linguistic abilities, etc., require what we call ''higher-order processing''—described by Lambie and Marcel (2002) as ''second-order awareness.'' Though one could consider

designation of stimuli as self-referential a higher cognitive function by itself, we distinguish self-referential processing from higher-order processing. We assume that self-referential processing filters, selects and provides those stimuli that are relevant for the self of a particular person. These stimuli, i.e., the self-referential ones, are then preferably and predominantly further elaborated in higher-order processing when compared to those stimuli characterized as non-self-referential. If this is true, self-referential processing must be regarded as an intermediary between sensory and higher-order processing rather than being characterized as a higher-order process by itself.

[11] It might not even make sense to speak of an organism anymore, but rather of some computational system.

[12] By saying this, we make two underlying assumptions. First, this hypothesis implies that mental states are actually physical brain states. Second, these brain states are *necessarily* directly inaccessible by the subject other than as mental states. At the same time, however, this hypothesis prevents its own direct proof, because a direct proof of this hypothesis would have to circumvent the autoepistemic limitation.

[13] Searle himself uses a different terminology, namely ontological and metaphysical rather than epistemological and ontological. We criticised his terminology in an earlier note and prefer to use common terminology instead.

[14] See, for instance, different versions of the identity theory of mind, like the anomalous monism proposed by Donald Davidson (1980, 1993), or the psychological functionalism proposed by Daniel Dennett (1988, 1991), just to name a few. It will be interesting to apply our concepts to these and other theories as well, but this goes beyond the focus of this paper.

[15] We ultimately would prefer not to use the terms 'materialism' and 'dualism' at all, since these are part of the traditional terminology that should be avoided.

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