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Progress in Understanding Consciousness? Easy and Hard Problems, and Philosophical and Empirical Perspectives

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Abstract
David Chalmers has distinguished the "hard" and the "easy" problem of consciousness, arguing that progress on the "easy problem"—on pinpointing the physical/neural correlates of consciousness—will not necessarily involve progress on the hard problem—on explaining why consciousness, in the first place, emerges from physical processing. Chalmers, however, was hopeful that refined theorizing would eventually yield philosophical progress. In particular, he argued that panpsychism might be a candidate account to solve the hard problem. Here, I provide a concise stocktake on both the empirical-neuroscientific and philosophical-conceptual progress on consciousness. It turns out that, whereas empirical progress is indisputable, philosophical progress is much less pronounced. While Chalmers was right, I argue, in distinguishing distinctive types of problems of consciousness, his prediction of progress on the hard problem was overly optimistic. Empirical progress and philosophical progress are essentially uncoupled; a more skeptical perspective on progress in philosophy in general is appropriate.

Keywords Hard problem of consciousness · Philosophy of mind · Neuroscience · Panpsychism · progress · David Chalmers

1 Introduction

The philosopher David Chalmers influentially distinguished the so-called hard problem of consciousness from the so-called easy problem(s) of consciousness: Whereas empirical science will enable us to elaborate an increasingly detailed picture about how physical processes underlie mental processes—called the "easy" problem—the

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reason *why* conscious experience, i.e., the subjective and qualitative experiencing of the world from a first-person perspective, arises out of a certain type of physical processing, may remain as elusive as ever—making this question the "hard" problem of consciousness (Chalmers, 1995, 1996).

One might not be happy with that distinction. The empirical challenges in pinpointing the neural correlates and causes of the various mental phenomena are all but not easy; in particular, to argue from a philosopher's standpoint that the "easy" questions fall into the realm of empirical science, whereas the "hard" and *real* problem is dealt with in one's own discipline, even if true, may not be a distinctly sensitive way of putting it. Also, conceptual philosophical objections were raised to the effect that a clear distinction between qualitative experience and cognition, between "hard" and "easy" problems, cannot be drawn and that thus there simply are no easy problems of consciousness (Lowe, 1995). Arguing that every intentional reference, and ultimately every (also non-iconic) thinking, has phenomenal character (e.g., Siewert, 1998) hits into the same vein.

However, Chalmers was right in identifying and differentiating the philosophical endeavor of pinpointing the conceptual relation between mind and matter (i.e., to elucidate *why* physical processing is or can be accompanied by experience) and the empirical endeavor of pinpointing the neural correlates of consciousness (i.e., to *assume* the existence of consciousness and then describe its neurophysiological basis as opposed to unconscious processing) (see Wagner-Altendorf, 2023a, b). A related distinction—between psychological or "access" consciousness and the philosophically more relevant "phenomenal" consciousness—has been introduced by Ned Block (Block, 1995). These distinctions have greatly contributed to make the philosophical as well as the transdisciplinary debate fruitful and have helped to clarify the relation between the philosophical, i.e., systematical and conceptual, and neuroscientific, i.e., empirical, approach to consciousness research.

Importantly, in his seminal paper, Chalmers states the intent to "make progress on the [hard] problem of consciousness" (Chalmers, 1995, p. 200), i.e., in the philosophical endeavor of addressing consciousness, although "progress in understanding brain function" (p. 207), i.e., in the empirical endeavor, will not affect "the *conceptual* point that the explanation of functions does not suffice for the explanation of [conscious] experience" (p. 209).

Here, Chalmers refers to the notion of *reductive explanation*: that a higher-level function can be explained by specifying the mechanism that performs this function. However, "[w]hen it comes to conscious experience, this sort of explanation fails," he notes (p. 203)—precisely because the reduction to a function cannot account for the qualitative character of phenomenal consciousness. This is what sets the "hard" problem of consciousness and the so-called "easy" problem apart: not that the latter is trivial to solve, but that it can be accounted for in principle by reductive explanation.

So, obviously, two kinds of progress must be distinguished, philosophical and empirical progress, and while Chalmers is claiming that the two are essentially *independent* of each other—empirical progress in understanding the neural basis of consciousness will not necessarily lead to conceptual progress on the hard problem, and vice versa—he generally argues that progress is equally possible in both cases,

viewing "pessimism" with respect to making philosophical progress on the hard problem as "premature" (p. 209).

In the present paper, I will provide a concise stock-take on the empirical vs. philosophical progress that has been achieved in the understanding of consciousness—more than 25 years after Chalmers' seminal publication. For the philosophical side, I will pick the theory of panpsychism as an exemplary position—as taking consciousness as a fundamental feature, as panpsychism does, is the direction that Chalmers had proposed. After clarifying the different notions of progress underlying empirical science and philosophy, I will claim that, although *some* progress has been made on the hard problem of consciousness in the sense that Chalmers had in mind, this must be considered a fundamentally different (and weaker) kind of progress as compared to the progress that we are used to in empirical science. Empirical and philosophical progress, I argue, are essentially *uncoupled*, in the sense that empirical data on consciousness does not drive philosophical progress on the "hard problem"—contrary to the assumption of some physicalists and in accordance with Chalmers' characterization of two distinct "problems" of consciousness. However, as a second target, also, Chalmers' (1995) final hypothesis on the hard problem, stating that "there is no reason to believe that it will remain permanently unsolved" (p. 218), is questioned, as it probably is too optimistic.

2 Progress in Empirical Science and in Philosophy

Very different notions of progress are underlying empirical science and philosophy—so fundamentally different that, whereas the fact of progress is undisputed and trivial in the case of empirical science, it is unclear how progress can be measured or if it even should be assumed to exist in the case of philosophy (see, among others, Moody, 1986; Dietrich, 2011; Chalmers, 2015; Brock, 2017 and Dellsén et al., 2021, for discussions and for differing views of progress in philosophy).

One way to point to this difference is to consider (historic) examples of researchers engaging in *both* empirical and philosophical questions (see, e.g., Dietrich, 2011). Think, for example, about what Aristotle—both philosopher and scientist—thought about natural phenomena—e.g., about the function of human organs or a volcanic eruption. Although Aristotle must be considered an immensely knowledgeable and diligent scientist, it is clear that we simply know *better* today how our bodily organs work and what their functions are: tremendous progress in our understanding of biological and other natural phenomena has been achieved.

Turning, however, to philosophical questions or phenomena reveals a quite different picture: Think, for example, about what Aristotle had to say on the notions of friendship or of justice—although I will not argue here for the view that we do *not* know better today about friendship or justice, it seems, to say the least, obvious that it is *not* obvious that there has been as much progress in understanding as in the case of natural phenomena.

When focusing again on the problem of consciousness (and on the problem of how progress in understanding consciousness can be achieved), the relevant question thus seems to be, Should (the problem of) consciousness be considered analogous

rather to a scientific entity such as a bodily organ, or to a (philosophical) concept such as justice?

Whereas it is obvious that conscious phenomena as well as related aspects of cognition such as attention or perception and their neural realization *can* be targeted by empirical (neuro)science—and consciousness therefore, in a sense, simply can be considered a natural trait—it is also evident that *conceptual* philosophical questions about consciousness (e.g., whether a reductive explanation of qualitative conscious experience is possible, or not) cannot be adequately targeted by empirical means.

This is where Chalmers' distinction between the two types of "problems of consciousness" comes into play: The so-termed "easy" problem of consciousness—to elaborate the neural processes underlying conscious experience, which evidently is far from being trivial—might perhaps be better termed the "empirical" problem of consciousness, whereas the so-called "hard" problem—to pinpoint the ontological relation between mind and matter, i.e., to elucidate *why* qualitative consciousness can arise out of (a certain type of) physical processing—might better be titled the "conceptual," i.e., the philosophical, problem of consciousness. The phenomenon of consciousness, thus, is incorporating aspects of both an empirically testable trait and a concept not subject to empirical study, and I suggest to transpose this "twofoldness" to Chalmers' distinction between the "easy" and the "hard" problem.

Characterizing the hard problem of consciousness as a conceptual problem, and maintaining that progress on conceptual problems is very limited, however, will question Chalmers' claim that there is "no reason" to assume that the hard problem will remain unsolved. To the contrary, there may be good reasons to believe exactly this—although I will present some arguments for the view that some philosophical progress, in a certain sense yet to be specified, can be considered to have been made since Chalmers' seminal publication.

In the following section, I will only very briefly elaborate on some prime examples to illustrate the progress in neuroscience and in neurology on both consciousness and related functions that have been achieved within the past decades. Then, in the main part of the present paper, I will contrast this empirical progress to the—much less marked, and significantly more controversial—progress on consciousness that was philosophically achieved, in the direction that Chalmers had in mind, i.e., in the panpsychist sense. This will result in questioning the view that empirical and philosophical progress on consciousness evolve—be it dependently on the other, or not—in parallel.

3 Progress on the "Empirical" Problem of Consciousness

Within the past century, and increasingly so within the past decades, enormous empirical progress with regard to the neurobiology of consciousness (embedded in immense progress of the neurosciences in general) has been achieved. I will not go into much detail here, as the present paper does not focus on empirical progress per se but on the contrast to the conceptual or philosophical progress being made, but I will name some of the prime examples.

With "consciousness entering the lab" in the 1990s, as Stanislav Dehaene puts it (Dehaene, 2014, p. 18), conscious phenomena—mainly in the visual domain—became subject to empirical study: When contrasting consciously perceived with not consciously perceived stimuli in visual illusion, binocular rivalry or subliminal masking tasks, electrophysiological or fMRI-morphological "signatures" of conscious perception arise, themselves giving rise to elaborate empirical theories of consciousness.

Central to making scientific progress on consciousness is the aim to pinpoint the so-called NCCs, the neural correlates of consciousness: the "minimum neural mechanisms jointly sufficient for any one specific conscious experience" (Koch et al., 2016; see also Crick & Koch, 1998). Importantly, identifying not only correlational but *causal* connections between a certain neural signature and a conscious sensation, e.g., via brain stimulation or lesions studies, is crucial (Koch et al., 2016).

Building upon an electrophysiological hallmark of conscious access, the P3b event-related potential EEG component indicative of a non-linear network "ignition" propagating to parietal and prefrontal cortical areas, next to an increase in high-frequency gamma-band oscillations, the Global Neuronal Workspace Theory holds that "information broadcasting" is the empirical core of consciousness (Dehaene, 2014; Dehaene & Changeux, 2011; Mashour et al., 2020). Recurrent processing thus amplifies and sustains the neural representation of the stimulus, allowing the corresponding information to be globally accessed, i.e., to become conscious (Mashour et al., 2020). There is an ongoing debate, however, about whether, e.g., the P3b actually reflects conscious awareness per se, or rather attentional processes or processes related to monitoring, memory updating, and reporting of conscious content (Koch et al., 2016; Pitts et al., 2014; Pitts et al., 2018).

It has therefore been argued that not a wide fronto-parietal network activation should be considered the adequate correlate of "mere" consciousness but a more restricted "temporo-parietal-occipital hot zone" that is activated in a content-specific way (Koch et al., 2016). In line with emphasizing the role of posterior cortical areas for conscious perception, the integrated information theory (IIT), put forward by Giulio Tononi, takes a somewhat more abstract and mathematical approach, claiming that physical systems are the basis for consciousness precisely if they constitute a network combining functional specialization with functional integration, so that their integrated information is high (Tononi, 2008; Tononi et al., 2016; see also Seth & Bayne, 2022). The term "functional" here does not imply a merely correlational, but a causal approach, as recent versions of the IIT are explicitly based on connectivity (Albantakis et al., 2023).

When contrasting consciousness and attention, importantly, and modeling them in an "orthogonal" way (i.e., as independent properties; Lamme, 2010), (phenomenal) consciousness is thought to emerge at a more basic neural level via localized recurrent processing within sensory cortices (Lamme, 2006; Pitts et al., 2018) and thus must probably be regarded a much more widespread phenomenon than our *access* to and later reporting on it (Lamme, 2010).

Next to the flourishing of large-scale theories of consciousness such as the global workspace theory, the recurrent-processing theory, and the integrated information theory, recently, empirical theories targeting the *cellular*

mechanisms of conscious experience have been put forward. The dendritic integration theory provides a neurobiological approach to consciousness, arguing that layer 5 pyramidal cells at the nexus between corticocortical and thalamocortical loops are crucial to consciousness, as they serve as a local gating mechanism and provide an integration of bottom-up and top-down data streams (Aru et al., 2020). The dendritic integration theory thus claims to provide a possible grounding at the cellular level for the large-scale theories of consciousness (e.g., for the integrated information theory, but also for the global workspace theory) and might also be a candidate for elucidating (a part of) the—long-elusive—neuronal mechanism of general anesthesia (Aru et al., 2020), but profound empirical testing is still outstanding.

There is, to be sure, a highly controversial debate on the differing empirical theories of consciousness, and strong disagreement, e.g., between (hypotheses of) the global neuronal workspace theory and the integrated information theory, and experimental findings are often described through the lens of a given theory, resulting in "dramatically different" pictures (Yaron et al., 2022). This disagreement notwithstanding, however, there are central commonly shared assumptions among the different theories of consciousness (e.g., that some mechanism of neural feedback or recurrent processing is needed for consciousness; Yaron et al., 2022), and importantly, there are aspirations to cooperate among scientific adversaries and to directly test the diverging predictions of different theories to promote empirical progress (e.g., the COGITATE consortium; Melloni et al., 2021).

Finally, and importantly, the neuroscientific progress on consciousness and on overall function of the central nervous system is embedded in a more general empirical progress that spans not only neuroscience but has been transferred to the clinical domain so that also an immense therapeutic progress in clinical neurology has been made within the past decades—i.e., practically substantiating the theoretical scientific progress. This includes one-time new and now essentially indispensable developments such as thrombolysis and thrombectomy in stroke therapy, highly refined immunomodulatory approaches in autoimmune CNS diseases, concepts for disease-modifying therapies in neurodegenerative disorders, and recently, e.g., the establishment of gene therapy for spinal muscular atrophy. Disorders of consciousness, in particular—coma, unresponsive wakefulness syndrome, and minimally consciousness state—are markedly difficult to treat as they typically occur secondary to severe (and often substantially irreversible) brain lesions, such as traumatic or ischemic brain injury. Still, novel therapeutic approaches for patients with prolonged disorders of consciousness have been proposed within the past years, including deep brain stimulation of the thalamus (Chudy et al., 2018; Kundu et al., 2018), transcranial direct current stimulation (Aloi et al., 2021; Thibaut et al., 2014), and noninvasive ultrasonic deep brain neuromodulation (Cain et al., 2022)—approaches which might, albeit clearly in a small subset of patients only, significantly impact the recovery of patients with disorders of consciousness in the future (see Edlow et al., 2021, for a recent review).

4 Progress on the "Conceptual," i.e., Philosophical, Problem of Consciousness

Empirical progress, thus, in investigating consciousness and its neural underpinnings is undisputed, but this empirical progress is not paralleled by an equally substantial progress in understanding consciousness in the philosophical sense, i.e., in elucidating the conceptual relation between the experiential and the physical.

The question of whether there is progress in philosophy—of whether there is some sort of progress at all, or (as it is sometimes formulated) of whether there is "enough" progress, i.e., progress to an extent that could reasonably be expected—naturally depends on how progress in philosophy is defined and, importantly, how it could be measured. However, the definition of philosophical progress itself is subject to an intricate philosophical debate, with, as Dellsén et al. (2021) put it, "a gerrymandered collection of merely sufficient conditions [...] and merely necessary conditions [for philosophical progress]" (p. 2), which are used and formulated by each side to bolster their own position.

Dellsén et al. (2021) themselves propose four distinct accounts to establish a common framework of philosophical progress, namely truthlikeness, problem-solving, knowledge (epistemic), and understanding (noetic). While all of these accounts have their merits for different philosophical topics, here, I will use the problem-solving account—according to which philosophical progress consists of philosophical problems being solved by certain philosophical positions—as well as the epistemic account—according to which there is progress in the case that more (justified) philosophical theories on a certain topic are formulated—to elaborate recent progress on the philosophical problem of consciousness. The truthlikeness and noetic accounts seem to be less suited for the present purpose—as it seems hard to determine, e.g., the truthlikeness of a conceptual (philosophical) theory not subject to empirical study. As an exemplary direction to look for philosophical progress, I will again start from Chalmers and evaluate a position or class of positions that he has been proposing in his seminal publication.

To address the "hard" problem of consciousness, Chalmers (1995) proposes a non-reductive account of the mental in the form of a double-aspect theory of information: "that information (or at least some information) has two basic aspects, a physical aspect and a phenomenal aspect" (p. 216), thus taking conscious experience "as a *fundamental* feature of our world, alongside mass, charge, and space-time" (p. 210; my emphasis). Chalmers' claim that "[e]xperience is information from the inside; physics is information from the outside" (Chalmers, 1996, p. 305) has become a ringing slogan about the ubiquity of the mental.

Conceiving of conscious experience as a fundamental and ubiquitous feature of reality implies arguably a form of *panpsychism*—the view that the mental does not emerge ad hoc when a certain level of (physical) complexity is reached but is present all the way down to the ultimate constituents of reality—that it is "present at the very origin of things," as a William James quote says (James, 1890, p. 149).

Panpsychism is an old doctrine, largely holding an outsider position in the philosophy of mind, though seeing somewhat a resurgence in analytic philosophy

within recent decades. Starting from Chalmers (1996), who judges panpsychism as "not as unreasonable as commonly supposed" (p. 305), some form of panpsychism has been put forward in works including Griffin (1998), Mathews (2003), Rosenberg (2004), Strawson (2006a), Brüntrup and Jaskolla (2016), Goff (2017, 2019), Seager (2019), and Goff and Moran (2021).

In the remaining part of the paper, I will take panpsychism as an exemplary position in the philosophy of mind, which has claimed to contribute to philosophical progress on the "hard" problem. I will outline the contributions of panpsychist positions to the understanding of the philosophical problem of consciousness—arguing that, although some progress can be considered to have been achieved recently according to the problem-solving and epistemic accounts of philosophical progress, this is a different and fundamentally weaker progress as compared to the one that we are used to in (empirical) science. In particular, the *collective convergence* of professionals toward a certain theory, toward a "compromise" between different theories, or toward an answer or solution to a particular problem over time (see Chalmers, 2015; Dellsén et al., 2021), indicating progress in empirical science, is not present in the philosophy of mind.

4.1 Panpsychism's Philosophical Progress on Consciousness According to the Problem-Solving Account

The problem-solving account of philosophical progress, according to Dellsén et al. (2021), holds that "philosophy progresses between t1 and t2 just in case there are fewer (or less important) unsolved philosophical problems at t2 than at t1" (p. 12).

This account might be seen as problematic, as I will briefly outline below, but *if* one accepts the problem-solving account of philosophical progress, two problems can be highlighted on which panpsychist positions recently could be said to have contributed to progress in the philosophy of mind. (One has to keep in mind, however, that "novel" panpsychist's attempts to solve certain philosophical problems might be considered in fact not particularly new. Proponents of panpsychism are fully aware of this; e.g., Strawson notes that "almost everything worthwhile that I have thought of has been thought of before, in some manner, by great philosophers in previous centuries (I am sure further reading would remove the 'almost')" (Strawson, 2006b, p. 184).)

The first problem that panpsychism could be said to successfully address is the problem of the *emergence of consciousness*: How can qualitative, intrinsic consciousness arise out of non-qualitative, extrinsic, i.e., structurally sufficiently describable, matter? The reductionist vs. dualist dilemma consists of either denying the non-reducibility of the experiential (running counter to classical anti-reductionist arguments, e.g., Nagel (1974) and Jackson (1982)) or postulating an ad hoc inter-attribute emergence of experiential from physical properties.

The panpsychist solution to this dilemma lies in postulating (proto-)experiential properties at the very fundamental level: Neither are experiential properties reducible to non-experiential properties nor is there a "brute" emergence of experiential

properties at a certain level of physical complexity; conscious experience (or "proto-experience") is present at every level of nature.

Rosenberg (2004) puts forward a conclusive argument in this vein. Imagine a world, called the "Life World," consisting of cellular automata, themselves consisting of cells instantiating the (abstract and merely relationally defined) properties of either "on" or "off." The cells take on the properties according to certain rules depending on the status of their neighboring cells, evolving from state to state (though the exact rules are not crucial to the argument). One can now imagine a very large "chessboard" of such cells that, despite its very simple underlying rules, quickly forms highly complex patterns of cells switched on and off—showing structural evolvement and reproduction and thus resembling biological mechanisms.

Rosenberg's argument for fundamental experiential properties now runs like this (Rosenberg, 2004, p. 18): The fundamental properties of the Life World consist of "bare differences" (i.e., structurally or relationally defined properties). Facts about bare differences cannot entail facts about the qualitative content of conscious experience (facts about qualitative content cannot evolve from facts about bare differences). Therefore, non-relationally defined, i.e., intrinsic, experiential or phenomenal properties should be assumed to already be laid out on the level of the basal ontology of our world.

Related arguments addressing the problem of the emergence of consciousness have been subsumed as "genetic arguments" for panpsychism and have been put forward, e.g., in Strawson (2006a)—arguing that "real" physicalism must be considered to entail panpsychism, as (A), "[f]ull recognition of the reality of experience [...] is the obligatory starting point for any remotely realistic (indeed any non-self-defeating) theory of what there is" (p. 4), and (B), "[f]or any feature Y of anything that is correctly considered to be emergent from X, there must be something about X and X alone in virtue of which Y emerges, and which is sufficient for Y" (p. 18)—as well as, similarly, in Brüntrup (2009).

The second philosophical problem that panpsychist positions can be said to address is the problem of *mental causation*. The problem of mental causation can be formulated as a trilemma (see Bieri, 1997, p. 5) consisting of three mutually exclusive hypotheses: (A) mental phenomena are non-physical phenomena, (B) mental phenomena are causally effective in the realm of physical phenomena, and (C) the realm of physical phenomena is causally closed. Hypothesis (A) is rejected by (materialist) reductionism, while hypotheses (B) and (C) are doubted by dualist positions—by epiphenomenalism and interactionist dualism, respectively. Jaegwon Kim has expressed the conundrum of mental causation by emphasizing "[reductionism's and functionalism's] unfortunate consequence of killing the patient in the process of curing him: in its attempt to explain mental causation, it all but banishes the very mentality it was out to save" (Kim, 1995, p. 194).

Chalmers (1995) already points briefly to the contribution that panpsychist positions can possibly make to progress on the problem of mental causation: Taking consciousness fundamental could allow us to "understand how experience might have a subtle kind of causal relevance in virtue of its status as the intrinsic aspect of the physical" (p. 217).

A detailed theory about how fundamental experiential or phenomenal properties exert causal roles has been elaborated by Gregg Rosenberg. According to his "Carrier Theory of Causation," (proto)conscious experience acts as an intrinsic carrier for causation itself: "The phenomenal qualities carry the effective properties of individuals within a causal nexus, and the experiencing of these qualities carries the receptiveness had by members of the nexus to these effective properties" (Rosenberg, 2004, p. 10). The basic idea is that the paradoxes of mental causation, as formulated by Kim and others, can be exposed as a "false dilemma" (p. 267) when a form of panpsychism (with experiential properties being the "intrinsic nature" of the physical) is presupposed: By being the carrier of every causation process, it is excluded that consciousness could be a mere epiphenomenon, and the causal efficacy of irreducible experiential properties is preserved even if the circuit of physical causation remains fully intact.

Relatedly, Hedda Hassel Mørch has worked out how consciousness could be the basis of causation. Even if we accept dispositionalism—the view that dispositions, i.e., properties that characterize what things *do* (not what they *are*), require no categorical realizers, but can be fundamental themselves—she argues, we arrive at the panpsychist conclusion: The only fundamentally dispositional properties we positively can conceive of are experiential properties—in particular those properties associated with agency and intention, i.e., with (subject) causation (Mørch, 2020a). In a related publication, she formulates an "argument for panpsychism from experience of causation": If the only kind of causal power whose nature we can positively conceive of is mental (from the experience of our own mental causation), and if both a non-reductionism and a realism about causation is assumed, then ubiquitous mental properties must be the basis of causation (Mørch, 2020b).

The metaphysical "costs," however, of Rosenberg's and Mørch's panexperientialism and its purported solution to the problem of mental causation—and that of fellow panpsychists; see, e.g., the, somewhat similar, process ontological Whiteheadian approach toward mental causation put forward by Griffin (1998)—lie in the assumption that physics cannot fully capture causation even in simple and obviously not consciousness-involving cases of "billiard ball causation." As Rosenberg (2004) puts it: "a complete theory of the causal nexus needs to go beyond physical theory" (p. 9).

Taken together, there is evidence that there has been some form of philosophical progress in the understanding of consciousness within the past decades—in the (narrow) sense that, among others, solutions from a panpsychist perspective to the problems of the emergence of consciousness and of mental causation have been proposed and elaborated.

However, the problem-solving account of philosophical progress is potentially problematic—as it can be argued that defining progress through problem-solving adds only little new. If one asks whether there has been progress in a certain area, and therefore turns to whether problems in that area have been solved, this presumably will not help: If scholars disagree on whether there has been progress, they will disagree on whether there has been (true) problem-solving. This, of course, applies to the here outlined panpsychist proposals to solve the problems of the emergence

of consciousness and mental causation—critics of panpsychism would simply not count those as solutions.

Importantly, it is not only in doubt that the purported solutions that panpsychist positions in the philosophy of mind provide actually solve the respective problem, but they create in fact *new* problems—the most important of which arguably is the "combination problem" for panpsychism: the problem of how micro-experiences (and micro-experiencing subjects) combine to macro-experiences (and to macro-experiencing subjects) (see Chalmers, 2016a; Seager, 1995).

4.2 Panpsychism's Philosophical Progress on Consciousness According to the Epistemic Account

Building upon the epistemic account of philosophical progress—according to which progress on a certain philosophical topic consists in the formulation of justified *theories* about it (Dellsén et al., 2021)—there has been as well some form of progress in understanding consciousness within the past decades, given that consciousness is taken as a fundamental and ubiquitous feature of reality. Important systematic contributions elaborating panpsychist or panexperientialist positions in the philosophy of mind have been made following Chalmers' seminal publication; I will provide a few examples.

Griffin (1998) (see also: Griffin, 1997, 1999) has capably translated the process philosophy of Alfred N. Whitehead into the modern analytic philosophy of mind. Process ontology sets events or "actual occasions," not substances, as the basic constituents of reality. Taking up Whitehead's notion of the "fallacy of misplaced concreteness," Griffin argues that all actual occasions consist of both a mental and a physical "pole" and that speaking of a purely physical entity is a mere *abstraction* that should not be assumed to exist in reality—which leads to the panpsychist hypothesis. In this sense, Griffin holds that a true "naturalization" of the mind—as opposed to the materialist, i.e., reductionist account of the term—requires panpsychism (or panexperientialism, as he puts it), as it implies "finally to carry through the regulative principle that mind should be naturalized, because it would involve attributing the two basic features that we associate with mind – experience and spontaneity – to all units of nature" (Griffin, 1998, p. 78). He then lays out a detailed panexperientialist theory grounded in Whitehead's process ontology, specifying the causal roles of the two actual entities' poles (mental and physical) in the ongoing processes of their creation and extinction.

Another, albeit wholly different, example of a developed panpsychist theory is Mathews (2003). Taking what might be called a "cosmopsychist" stance (see also Nagasawa & Wager, 2016), Mathews argues for subjectivity or mind-like properties of the universe as a whole (Mathews, 2011), postulating a "communicative order" allowing for "encounter" between the subjects at different levels (Mathews, 2003). While cosmopsychist positions do not face the combination problem to the same extent as bottom-up (micro)panpsychisms, this is arguably replaced by a kind of "derivation problem" of how cosmic and sub-cosmic mental attributes relate to each other (Nagasawa & Wager, 2016). Such "cosmological panpsychisms," of course, are highly speculative

and are advocated by only a small minority of philosophers; however, as they are systematically elaborated theories that are at least not unjustified, they will count as philosophical "progress" in the above specified epistemic sense.

The panexperientialist approach of Gregg Rosenberg has already been mentioned (Rosenberg, 2004; see also: Rosenberg, 2016), developing a detailed theory of natural individuals via linking experience and causation, according to which "[t]hings in the world are natural individuals if, and only if, they are capable of experiencing phenomenal individuals" (Rosenberg, 2004, p. 241). Higher-level experiencing subjects such as human minds then are thought of as emerging out of a layered structure of reality with experiencing individuals *co-existing* at the different levels (see also Brüntrup, 2016), with higher-level individuals placing constraints on lower-level individuals within a framework called "causal significance" (as opposed to the classical concept of "causal responsibility"; see Rosenberg, 2004, ch. 9).

Importantly, progress has been made in so far as panpsychist approaches to consciousness have been formulated in a more nuanced way in recent years. Namely, the differentiation between constitutive and non-constitutive forms of panpsychism has been established in the debate (Brüntrup & Jaskolla, 2016; in particular Brüntrup, 2016; and Chalmers, 2016b). Whereas constitutive panpsychism holds that "macroexperience is constituted by microexperience, or realized by microexperience", and thus "macrophenomenal truths obtain in virtue of microphenomenal truths, in roughly the same sense in which materialists hold that macrophenomenal truths obtain in virtue of microphysical truths" (Chalmers, 2016b, p. 25), non-constitutive or emergentist panpsychism denies a reducibility of macro- to microexperience and argues that facts about macroexperience are among the fundamental facts—strongly, but not "super-strongly" emergent (see Brüntrup, 2016) from the facts about microexperience. To point out the difference between the two versions of panpsychism from a more systematic perspective, while constitutive panpsychism provides an elegant and parsimonious, yet non-reductionist, account of integrating mental phenomena into the (physical) world, non-constitutive or emergent panpsychism claims to better account for macro-level mental phenomena, e.g., for agency and (libertarian) free will (see Goff, 2020).

Taken together, important contributions to philosophical theories conceiving consciousness as an irreducible, fundamental property of reality have recently been made—which may count as a form of epistemic "progress" in the philosophy of consciousness. These theories, however, are highly speculative and controversial, and there is in no way a guarantee that they represent only an iota of approximation to the truth—instead, there are valid arguments against panpsychism, i.e., good reasons to believe that they do not (which, to be sure, holds for any position in the philosophy of mind).

4.3 Contrasting Empirical and Philosophical Progress in Understanding Consciousness

Building upon the problem-solving and epistemic accounts of philosophical progress according to Dellsén et al. (2021), it might thus be said that there has been progress within the past quarter century in understanding (the philosophical problem of) consciousness: This in particular holds for the systematic direction that Chalmers

had tentatively sketched in his seminal 1995 publication (and that he has helped to elaborate in several subsequent works)—that consciousness should be regarded as a fundamental and ubiquitous feature of reality.

This "progress," however, at best is decidedly weak or limited, as compared to the empirical progress (on consciousness) that has been achieved; at worst, it is no progress at all but only an advancement better described as "staying current" and not to be confounded with making progress in any substantial sense (see Dietrich, 2011).

In particular, a sort of *agreement* between philosophers about the adequate answer to the problem of consciousness (and to most other philosophical questions)—or, at least, some kind of *development toward* an agreement—which is often cited as a necessary condition for progress (see Dellsén et al., 2021), is not in sight. Chalmers (2015) cites a 2009 survey among more than 450 professional philosophers—largely specializing in analytic/Anglocentric philosophy—according to which a (rather small) majority of 57% of them hold that physicalism in the philosophy of mind is true (and finding overall a "striking" degree of disagreement between the philosophers on 30 philosophical questions). As there are no data from earlier time points (the 2020 follow-up study shows, in the 2009–2020 longitudinal comparison group, no relevant change in attitude toward physicalism; see Bourget & Chalmers, 2023), it is difficult to determine whether there is or was a convergence toward endorsing physicalism over the past decades—but it seems plausible that the approval of physicalism, if not higher, at least was the same in the analytic philosophy of the 1950s or 1960s. And, of course, the survey's restriction to analytically oriented philosophers further masks dissent. More importantly, it seems misleading to speak of physicalism as a single doctrine about the nature of the mind—since highly disparate positions such as non-reductive physicalism and eliminative physicalism subsume under "physicalism," not to mention panpsychist positions such as Strawson's "real physicalism" and Griffin's "panexperientialist physicalism," so that even the 57% "consent" to physicalism actually represent strong dissent on crucial aspects in the philosophy of mind.

Interestingly, in a more recent publication, Chalmers explores idealism— the view that reality is fundamentally mental—as a solution to the mind-body problem (holding that idealism might be implausible, but not substantially more implausible than its competing positions are). He begins this exploration with the saying that, as a philosopher, "[o]ne starts as a materialist, then one becomes a dualist, then a panpsychist, and one ends up as an idealist" (Chalmers, 2021). It is not clear to whom the saying must rightly be attributed (someone sympathetic to idealism, obviously), but if there is at least a little truth in it, then it lends support to the view that progress in the philosophy of mind is of a fundamentally different nature than in the empirical sciences—resembling more a "circle of life"-ish way of progressing than true progress toward some generally shared view about the nature of the mental (and of the physical).

I do not argue here for whether a "glass-empty" or a "glass-half-empty" view of philosophical progress on consciousness is appropriate (see Chalmers, 2015, for this expression, and for a defense of the "glass-half-empty" view). The claim advocated here is that empirical progress and philosophical progress on consciousness are essentially *uncoupled* from each other: Empirical progress will not lead to

philosophical progress on consciousness (as some physicalists seem to assume),[1] and also, there will be no "parallel" progress of the two when only philosophers are working out "more refined theories" about the conceptual problem of consciousness (as Chalmers, 1995, seemed to hope). In particular, it is unclear how the process of eliminating theories—"as a necessary means of making progress" (Yaron et al., 2022)—that we are used to in empirical science does and can take place in philosophy (of mind). The demand of theory elimination, in fact, stands diametrically opposed to the (weak) sense in which progress on the hard problem can be said to have taken place—in the sense of the epistemic account, i.e., through formulating (not unjustified) philosophical theories.

Given the obvious lack of collective convergence on a philosophical concept about the ontological relation of mind and matter, there seems to be, contrary to the claim that there is "no reason" to believe that the hard problem "will remain permanently unsolved" (Chalmers, 1995, p. 218), (at least some) good reasons to believe exactly this.

5 Conclusion

We thus arrive at a twofold conclusion. Chalmers, I claim, was right in characterizing two very distinct problems of consciousness, the empirical and the philosophical problem of consciousness, and in criticizing the frequently performed confusion of the two (a "bait-and-switch"; Chalmers, 1995, p. 202). The distinctness of the two problems of consciousness in particular implies that making progress in empirical research will only hardly contribute to making progress on the conceptual philosophical problem (i.e., on the elucidation of the ontological relation between the mental and the physical).

This, to be sure, does not imply that only philosophers, and not scientists, can deal with the so-called hard problem: It must be addressed, I believe, by philosophical and conceptual (and not by empirical) means and arguments—but philosophical arguments and reasonings are open to everyone, regardless of which discipline they belong to; one has only to avoid the confusion of the two distinct problems of consciousness.

On the other hand, Chalmers' prediction that, with "further investigation, more refined theories, and more careful analysis" (p. 217f.), considerable philosophical progress on consciousness is possible, so that the hard problem will eventually be solved, seems overly optimistic. It is not quite clear what "solve" will mean in

[1] One might argue that empirical progress and conceptual progress are not uncoupled in the sense that conceptual, and perhaps philosophical, clarification, is the *prerequisite* of empirical progress. This, of course, is trivial insofar as the target of any empirical investigation must at first be defined, which is a conceptual undertaking. One example of profound philosophical reasoning leading to empirical theories is the higher-order theories—which were first proposed philosophically (e.g., Rosenthal, 1986, 2005), and then targeted empirically (e.g., Fleming, 2020; Lau & Rosenthal, 2011). However, this does not affect the here advocated skeptical claim that empirical progress on consciousness does not, to a significant extent, drive progress on the "hard problem."

this context, but it would presumably involve some kind of agreement or consensus between (at least a substantial majority of) experts on that solution, which is obviously not in sight.

Finally, the relevant metaphilosophical question, of course, is whether trying to align the concept of progress in philosophy to the concept of progress in empirical science is actually appropriate. It could turn out, instead of comparing philosophical progress to empirical progress, to be more rewarding to compare progress in philosophy to progress in art: There clearly is a sense in which art evolves or moves forward from one style or epoch to another, but this usually does not imply an overcoming or abandoning of the works of the past nor any overarching and objectifiable consensus. Moody (1986), e.g., makes the case that there could be progress in philosophy according to a notion of progress exemplified by "[t]he poet, the painter, the composer and the sculptor [who] are guided by some inner sense that tells them when they are 'getting it right' and when they are not" (p. 35).

Aligning philosophy to art, however, seems to have the unpleasant consequence of making the boundary between philosophy and literature vague and porous, suggesting to relinquish the realistic stance.

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Declarations

Conflict of Interest The author declares no competing interests.

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