

## A quadrilemma for theories of consciousness

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Preprint of a paper to be published in the *Philosophical Quarterly*

(<https://doi.org/10.1093/pq/pqae053>)

First version 28 September 2023; final version 4 May 2024

**Abstract:** In this paper, I argue that no theory of consciousness can simultaneously respect four initially plausible metaphysical claims – namely, ‘first-person realism’, ‘non-solipsism’, ‘non-fragmentation’, and ‘one world’ – but that any three of the four claims are mutually consistent. So, theories of consciousness face a ‘quadrilemma’. Since it will be hard to achieve a consensus on which of the four claims to retain and which to give up, we arrive at a landscape of competing theories, all of which have pros and cons. I will briefly indicate which kinds of theories correspond to the four horns of the quadrilemma.

**Keywords:** Consciousness; first-person realism; non-solipsism; non-fragmentation; one vs many worlds; meta-problem of consciousness.

### 1. Introduction

It is widely felt that the study of consciousness has reached an impasse. The field is deeply divided along several dimensions: between those who seek to give a physicalist and/or materialist account of consciousness and those who embrace dualist or other non-physicalist views; between those who think that – with or without physicalism – we should seek to give a ‘third-personal’ and ‘objective’ account of consciousness and those who think that this is infeasible or even misguided; between those who think that consciousness is somehow fundamental and those who think it is merely derived; between those who follow panpsychists in thinking that consciousness, at least in some form, is quite ubiquitous in the world and those who think it is rather special; and so on. David Chalmers (2018) has coined the term ‘the meta-problem of consciousness’ to refer to the problem of explaining why it seems (to many of us) to be so hard to explain consciousness and why there is so little agreement on both substantive and methodological questions concerning its explanation.

My aim in this paper is to draw attention to one perhaps under-appreciated aspect of the difficulty of explaining consciousness. I will argue that any attempt to explain how consciousness fits into the world faces a ‘quadrilemma’:

There are four at first sight plausible claims that we might expect any satisfactory metaphysical and/or scientific theory of consciousness to be consistent with – namely, ‘first-person realism’, ‘non-solipsism’, ‘non-fragmentation’, and ‘one world’ – but these four claims are mutually inconsistent. Any theory can retain at most three of them at once and must give up at least one.

Since different people are likely to disagree about which of the four claims to retain and which to give up, we arrive at a landscape of competing theories, all of which have something going for them, but all of which also leave some participants to the debate unsatisfied.

## 2. The quadrilemma

I will first state the four claims and then explain why each of them is at least initially plausible and why they are mutually inconsistent.

**First-person realism:** For any conscious subject, there are first-personal facts.

**Non-solipsism:** More than one conscious subject is real.

**Non-fragmentation:** The totality of facts that hold in any given world are compossible.

**One world:** Reality consists of one world, not of many.

Let me begin with first-person realism (an idea that also occurs in Fine 2005, Merlo 2016, and Lipman 2023, as discussed later). A widely recognized feature of phenomenal consciousness is its first-person nature. My conscious experiences are first-person experiences. Consciousness is not merely something that is happening out there in the world impersonally, but *I* am conscious. I have experiences, perceptions, feelings, sensations, and so on. The first-person nature of consciousness is one of the things on which there is some common ground between many analytic philosophers of consciousness and phenomenologists in the tradition of Edmund Husserl and others. On the analytic side, for example, David Chalmers (2004: 1111) writes:

‘The task of a science of consciousness [...] is to systematically integrate two key classes of data into a scientific framework: *third-person data*, or data about behavior and brain processes, and *first-person data*, or data about subjective experience.’

And Thomas Nagel, cited by analytic philosophers and phenomenologists alike, speaks of conscious states as having ‘essential subjectivity’ (1965: 354) and as being ‘essentially connected with a single point of view’ (1974: 437), and he emphasizes as central

‘the fact that *I* (or any self), and not just that body, am the subject of those states’ (Nagel 1965: 354, emphasis in the original).

Relatedly, Lynne Rudder Baker (2013: xiii–xiv) notes that

‘[N]aturalism takes the world to be impersonal; what exists are all individuals and all their properties, but none of these requires appeal to anything expressible in the first person.’

But she observes that such a worldview leaves out any subject’s first-person perspective (*ibid.*):

‘How, then, is there a place for the putative fact that some particular person is me? [...] How could a centerless world accommodate me? [...]

[T]he answer to the questions in the last paragraph, on naturalistic views, is that there are no irreducibly first-person facts. I shall argue otherwise: If we take first-person facts to entail properties expressible only in the first person (“first-person properties”), then [...] there are irreducible first-person facts.’

Similarly, Dan Zahavi (2017: 194) observes:

‘[S]ubjectivity is a built-in feature of experiential life. Experiential episodes are neither unconscious, nor anonymous, rather they necessarily come with first-personal givenness or perspectival ownership. The what-it-is-likeness of experience is essentially a what-it-is-like-for-me-ness.’

These ideas lend at least some initial support to the claim that, for any conscious subject, there are first-person facts, such as, in my case, the fact that I am currently in a particular experiential state. Later I will discuss the opposing view, which denies the existence of first-person facts or even the notion that there is a third-person/first-person distinction at the level of facts at all.<sup>1</sup>

Next, consider non-solipsism. This should be quite uncontroversial. Apart from a few adherents to solipsism, most people are likely to believe that they are not the only conscious subject (for discussion, see, e.g., Avramides 2020). It is very reasonable to expect a good theory of consciousness to vindicate this idea. Consciousness occurs not just in myself but also in many other subjects, at least in all awake and non-comatose people and plausibly also in many non-human animals, including but not restricted to the great apes. A theory that asserts that I am the only conscious subject would be extremely counterintuitive. However, I will later also discuss a theory that gives up non-solipsism.

Third, let me move on to non-fragmentation. This is arguably another uncontroversial thesis, in fact so uncontroversial that it is seldom spelt out explicitly. If we think of a ‘world’ – either the actual world or some other possible world – as being ‘populated’ by a large body of facts (plausibly, the world is constituted by the totality of facts that hold in it), then a basic necessary condition for the possibility of the world in question is that all those facts are compossible, i.e., it is possible for them to be simultaneously instantiated, namely at that world. A world consisting of mutually incompatible (‘non-compossible’) facts would be incoherent and thus not a possible world, let alone a candidate for being the actual world. At most so-called ‘impossible worlds’, sometimes discussed in metaphysics, could include non-compossible facts, but such worlds are not possible ones. (On impossible worlds, see, e.g., Berto and Jago 2019.)

Finally, let me turn to one world. A central tenet of a standard scientific but also philosophical worldview is that reality consists of a single world – the actual world – which is shared by all of us and of which science aspires to give us an objective picture. It is very unusual and non-standard for a scientific or philosophical worldview to postulate that there are many distinct worlds all of which are equally real even if only one is ‘actual’ for any subject. We find such

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<sup>1</sup> I further defend the thesis that some of the facts about conscious experience are first-personal in List (2023b).

an idea at most in some special interpretations of quantum mechanics such as many-worlds interpretations in the tradition of Everett (e.g., Wallace 2014) or QBism, a radically subjectivist interpretation that gives a central role to the observer or subject (e.g., Fuchs 2010, Mermin 2019). Philosophical arguments against ‘one world’ have been offered by Vacariu (2005), who argues that ‘the postulation of “*one world*”, one single ontological world in which everything has been placed (all the entities like Gods, angels, minds, bodies, planets, tables and micro-particles)’ (2005: 516) is a major impediment to solving the mind-body problem, and Gabriel (2015), who argues that ‘the world’, understood as the totality of everything, ‘does not exist’. And Lewis (1986) defends a form of modal realism, according to which different possible worlds – not just one actual world – are each real. It seems fair to say, however, that the ‘one-world’ picture of reality is the mainstream picture in both science and philosophy.

I do not deny that one could object to some or even all of the four claims. Indeed, I will argue that at least one claim must ultimately be dropped. But I suggest that the four claims each have some *initial* plausibility at least as baseline theses for a metaphysical investigation of consciousness. Needless to say, there may be other plausible claims that one might add to this list, but as I will now explain, even those first four claims cannot be simultaneously true.

The argument is relatively straightforward. Suppose non-solipsism is true. Then more than one conscious subject is real. For each of these subjects, according to first-person realism, there are first-person facts. However, the totality of first-person facts for different conscious subjects cannot be co-instantiated *as first-person facts*: they are not compossible. To see this, suppose I am in conscious state X, and you are in conscious state Y, where X and Y are the complete conscious states that we are each in, respectively. Thus, ‘I am in conscious state X’ is a first-person fact for me, and ‘I am in conscious state Y’ is a first-person fact for you. Moreover, the two conscious states, X and Y, *qua complete token subjective states that we are each in*, are mutually exclusive. After all, we are distinct subjects, with a different perspective on the world. No single subject could be in states X and Y simultaneously. An implication is that the conjunction of the first-person sentences ‘I am in conscious state X’ and ‘I am in conscious state Y’ is necessarily false (because X and Y are mutually exclusive). And so, the corresponding first-person facts cannot be jointly instantiated *as first-person facts*.<sup>2</sup>

Another way of making the same point is to note that any first-person fact is not generally invariant under shifts in perspective: it may cease to obtain as one changes perspective. Whether such a fact obtains thus depends on the perspective taken. For any two first-person facts to be compossible, it must therefore be possible for them to obtain from the same perspective. For example, I see a computer screen in front of me, and I also see my desk in front of me. Clearly, these two first-person facts can be – and indeed are – co-instantiated from the same perspective, and thus they are compossible. Now the first-person fact that *I* describe with the sentence ‘I am in conscious state X’ obtains from where I stand but not from where

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<sup>2</sup> Others who have noted the non-compossibility of different subjects’ first-person facts include Fine (2005), who observes that if we accept different subjects’ first-person facts as real, we may end up with a ‘fragmented’ picture of reality, and Merlo (2016), who notes that recognizing the equal reality of such facts would (without some other theoretical move) lead to ‘an overall incoherent totality of facts’ (2016: 324).

you stand. The first-person fact that *you* describe with the sentence ‘I am in conscious state Y’ obtains from where you stand but not from where I stand. But insofar as X and Y are mutually exclusive, there could not be any perspective from which both first-person facts jointly obtain. At most one of them could ever obtain from any single perspective. And so, the two first-person facts are non-compossible.<sup>3</sup>

Of course, there are corresponding third-person facts of the form ‘Christian is in conscious state X’ and ‘Christian’s interlocutor is in conscious state Y’, and these are perfectly capable of being co-instantiated; they are entirely compossible. But if we accept first-person realism, we must not confuse the first-person fact that *I* am in conscious state X with the third-person fact that Christian is in conscious state X. The latter fact, here expressed in third-person language, holds as much for you as it does for me. Whether we look at the world from where you stand or from where I stand, the fact that ‘Christian is in conscious state X’ remains the same. By contrast, what is distinctive about a first-person fact is that it is *not* invariant under shifts in the subjective perspective. Indeed, this non-invariance is a core feature of its ‘essential subjectivity’, to use Nagel’s term again. The first-person and third-person facts are not the same precisely because only the former but not the latter has this ‘essential subjectivity’.

So far, then, the upshot is that the first-person facts for different conscious subjects are not compossible, where, crucially, this non-compossibility claim is being made about first-person facts of the form ‘I am in conscious state X’ and ‘I am in conscious state Y’, not about corresponding third-person facts of the form ‘Christian is in conscious state X’ and ‘Christian’s interlocutor is in conscious state Y’, which, as noted, are perfectly compossible.

Now, if – as assumed – two or more conscious subjects are real, each with first-person facts, and these first-person facts are not compossible, it follows that

- *either* the claim of non-fragmentation is false, and the world subsumes those non-compossible facts;
- *or* the claim of one world is false, and there are many worlds, namely one ‘subjective’ world for each conscious subject, rather than just a single ‘objective’ world.

Thus, if we accept first-person realism and non-solipsism, we must give up either non-fragmentation or one world. If we take the first route (dropping non-fragmentation), we can retain the claim that there is a single world, but this world will be internally fragmented and

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<sup>3</sup> The argument can be formalized by representing first-person facts by means of first-personally centred propositions (List 2023a). A *first-personally centred proposition* can be defined as a set of first-personally centred worlds. A *first-personally centred world*, in turn, can be defined as an ordered pair consisting of an ordinary, third-personal world and a first-person perspective on it (more on this in Section 4.4). Any first-person fact is represented by the first-personally centred proposition consisting of precisely those first-personally centred worlds at which that first-person fact holds. The totality of first-personally centred propositions that are true from where I stand will then represent ‘my’ first-person facts, and the totality of first-personally centred propositions that are true from where you stand will represent ‘your’ first-person facts. Those two sets of first-personally centred propositions are mutually inconsistent. The reason is that, given our different first-person perspectives, the intersection of all these first-personally centred propositions (yours and mine) is empty: no first-personally centred world can satisfy all of them together.

thereby incoherent: not all the facts populating it can be instantiated together. If we take the second route (dropping one world), we can retain the traditional idea that the totality of facts making up any world are co-instantiated in that world, so that ‘worlds’ are always internally coherent, but we must embrace the view that different subjects are associated with different ‘subjective worlds’.

In sum, first-person realism, non-solipsism, non-fragmentation, and one world are mutually inconsistent. We cannot accept all four claims together.

### 3. An objection

Before we consider possible ‘escape routes’ from this quadrilemma, I want to discuss an objection that might be raised against my analysis. To present the objection (for which I am indebted to an anonymous reviewer), it is helpful to distinguish between two theses that I have put forward. The first was that the four metaphysical claims under consideration – first-person realism, non-solipsism, non-fragmentation, and one world – are at least initially plausible; call this the ‘plausibility thesis’. The second was that the four claims are mutually inconsistent; call this the ‘inconsistency thesis’. The objection says that the inconsistency thesis requires a more demanding interpretation of the four claims than supported by the plausibility thesis. In particular, the objection focuses on first-person realism and non-fragmentation, though one might conceivably try to formulate a similar objection with regard to the other two claims too. Let’s begin with first-person realism.

What is plausible, the objection concedes, is the claim that, for any conscious subject, there are first-person facts. After all, the first-person nature of conscious experience is widely recognized. However, the objection points out, to argue for the inconsistency thesis, I had to rely, at least implicitly, on a further claim, namely:

**The irreducibility claim:** First-person facts are not (or not generally) reducible to third-person facts.

If, for example, ‘my’ first-person fact ‘I am in conscious state X’ were reducible to the third-person fact that Christian is in conscious state X, and ‘your’ first-person fact that you describe with the sentence ‘I am in conscious state Y’ were reducible to the third-person fact that Christian’s interlocutor is in conscious state Y, then the non-compossibility problem at the centre of my argument would disappear. As noted, these two third-person facts are perfectly compossible: it is possible for Christian to be in conscious state X while Christian’s interlocutor is in conscious state Y.

According to the objection, even if first-person realism is plausible, this does not imply that the irreducibility claim is also plausible. And my argument for the inconsistency thesis requires the irreducibility claim, not just first-person realism.

As an anonymous reviewer puts it:

‘realism about a class of facts (say facts about chairs) does not entail the non-reducibility of those facts to another class, nor does it require that those facts are distinct from another class of facts.’

In general, this observation is right. For instance, one can be a realist about macroscopic facts in some domain – whether in the natural or in the social sciences – without presupposing that these are irreducible to underlying microscopic facts. At first sight, therefore, it may seem as if the irreducibility claim is an additional assumption that my argument for the inconsistency thesis requires. An objector could accept first-person realism but reject this additional assumption. Nevertheless, I want to resist the objection and insist that the irreducibility claim is not a further assumption but simply a ‘lemma’ that follows immediately once one correctly characterizes what first-person facts are.

Specifically, as noted, a key feature of first-person facts is their ‘essential subjectivity’: they are not invariant under shifts in subjective perspective. The first-person facts that hold from where I stand differ from those that hold from where you stand. By contrast, the third-person facts are identical across these two perspectives. An immediate implication (as also argued in List 2023a, 2023b) is that first-person facts do not supervene on third-person facts: the first-person facts are underdetermined even by the totality of third-person facts.<sup>4</sup> To see this, note that, for the first-person facts to supervene on the third-person facts, it would have to be impossible for the first-person facts to differ without any difference in the third-person facts. But the third-person facts do not change as we shift perspective, while the first-person facts do. So, the first-person facts cannot supervene on the third-person facts alone.<sup>5</sup>

Nagel (1965: 354–355) makes a version of this point too. He asks us to imagine ‘everything that can be said about the world without employing any token-reflexive expressions’, which – for present purposes – is everything that can be described in third-person language. He says:

‘This will include the description of all [of the world’s] physical contents and their states, activities, and attributes. It will also include a description of all the persons in the world and their histories, memories, thoughts, sensations, perceptions, intentions, and so forth. I can thus describe without token-reflexives the entire world and everything that is happening in it – and this will include a description of Thomas Nagel and what he is thinking and feeling.’

But crucially:

‘there seems to remain one thing which I cannot say in this fashion – namely, which of the various persons in the world *I* am. Even when everything that can be said in the specified manner has been said, and the world has in a sense been completely described, there seems to remain one fact which has not been expressed, and that is the fact that I am Thomas Nagel’ (*ibid.*).

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<sup>4</sup> To say that one set of facts – say, the ‘A-facts’ – *supervenes* on another set of facts – say, the ‘B-facts’ – is to say that it is impossible for any of the A-facts to change without any change in at least some of the B-facts.

<sup>5</sup> The formalism of first-personally centred worlds and first-personally centred propositions, as distinct from uncentred worlds and uncentred propositions, can be used to derive this non-supervenience claim more formally (List 2023a).

While this point is widely recognized with regard to the relationship between indexical and non-indexical facts – the key insight being that the non-indexical facts do not fix the indexical facts – the point carries over to the relationship between first-person and third-person facts. Even when all third-person facts are fixed, this is insufficient to fix all the first-person facts. The non-supervenience of the first-person facts on the third-person facts then implies the irreducibility claim. After all, supervenience would be a necessary (albeit perhaps not sufficient) condition for reducibility.<sup>6</sup>

I conclude that if one accepts first-person realism and appreciates the non-invariance of first-person facts under shifts in subjective perspective, then one is immediately committed to the irreducibility claim. Indeed, I suspect that most of the above-cited exponents of first-person realism (including Fine 2005, Baker 2013, Merlo 2016, and Lipman 2023) would agree that first-person facts, when properly characterized, are irreducible to third-person facts. I am inclined to think that those who are reluctant to accept the existence of *irreducible* first-person facts simply do not genuinely accept first-person realism. This is fine, of course. The rejection of first-person realism is one of the possible escape routes from the quadrilemma, after all.

Next, let me turn to non-fragmentation. Here, too, the objection begins with a concession. The objection concedes that it is plausible to require, as non-fragmentation does, that the totality of facts that hold in any given world be compossible. However, the objection alleges that, to argue for the inconsistency thesis, I had to rely on a particularly demanding interpretation of what this means in the case of first-person facts. As readers will recall, I assumed that, for any two first-person facts to be compossible, it must be possible for them to be co-instantiated *as first-person facts*, i.e., it must be possible for them to obtain from the same perspective. In particular, the first-person facts that you and I describe, respectively, with the sentences ‘I am in conscious state Y’ and ‘I am in conscious state X’ are compossible only if they can be co-instantiated from a single perspective, which, as noted, is not the case when X and Y are mutually exclusive conscious states.

According to the objection, this is a demanding interpretation of what the compossibility of first-person facts requires. To see why, consider the following pairs of facts:

(1) I am in conscious state X.

(2) I am in conscious state Y.

(1\*) There is a perspective, namely Christian’s, from which it is true to say ‘I am in conscious state X’.

(2\*) There is a perspective, namely that of Christian’s interlocutor, from which it is true to say ‘I am in conscious state Y’.

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<sup>6</sup> I don’t need to commit myself to any particular account of reducibility here. It suffices to assume that, for any two sets of facts A and B, the supervenience of the A-facts on the B-facts is a necessary condition for the reducibility of the A-facts to the B-facts.



I assumed that, for the first-person facts of different conscious subjects to be compossible, the kinds of facts described by (1) and (2) must be compossible. And I argued that (1) and (2) are not compossible. The objection, by contrast, proposes a less demanding compossibility requirement. It is sufficient for non-fragmentation, the objection suggests, that the kinds of facts described by (1\*) and (2\*) are compossible, namely the facts that *there is a perspective from which it is true to say 'I am in conscious state X'* and *there is a perspective from which it is true to say 'I am in conscious state Y'*. Note that, in the italicized descriptions of those facts, the first-person clause is embedded or quoted within a third-person clause. Now the objection is right that there is no conflict between (1\*) and (2\*). While the conjunction of (1) and (2) is necessarily false (if X and Y are mutually exclusive), the conjunction of (1\*) and (2\*) is clearly consistent. If non-fragmentation, as applied to first-person facts, were to require merely the compossibility of (1\*) and (2\*), then the non-compossibility problem at the centre of my argument would again go away. The inconsistency thesis would no longer follow.

However, the facts described by (1\*) and (2\*) are not first-person facts at all. Rather, they are, in a perfectly straightforward sense, third-personal. The reason is that they are completely invariant under shifts in subjective perspective. Irrespective of whether we look at the world from my perspective or from yours, it remains the case that there is a perspective, namely Christian's, from which it is true to say 'I am in conscious state X', and there is another perspective, namely that of Christian's interlocutor, from which it is true to say 'I am in conscious state Y'. Crucially, if we accept first-person realism, we are committed to realism about facts of the forms (1) and (2) and not merely to realism about facts of the forms (1\*) and (2\*). So, the collection of facts to which non-fragmentation's compossibility requirement applies must include those facts (i.e., facts of the forms (1) or (2)).

To see that facts of the forms (1\*) or (2\*) do not exhaust the inventory of facts according to first-person realism, but that a first-person realist must also recognize facts of the forms (1) or (2), note, for instance, that the totality of facts about what is or is not the case from Christian's perspective (which are third-person facts) underdetermines the facts about what is or is not the case from *my* perspective (which are first-person facts), unless I introduce the further first-person premise that I am Christian.

So, in response to the second part of the objection, which questioned my interpretation of non-fragmentation, I insist that I have interpreted non-fragmentation correctly. When we ask whether the first-person facts of different conscious subjects are compossible, we must ask whether the kinds of facts described by (1) and (2) are compossible and not merely whether the kinds of facts described by (1\*) and (2\*) are compossible, and so my argument for the inconsistency thesis goes through.

That said, I concede one important insight behind the objection. It is true that, once one appreciates the mutual inconsistency of the four claims I have considered, one is forced to re-evaluate their plausibility. Thus, the inconsistency thesis prompts us to reconsider the plausibility thesis. For example, if one is unwilling to abandon one world and non-solipsism, one must decide whether one finds first-person realism or non-fragmentation more plausible, and one must give up or relax the other claim. In fact, it will be congenial if, on closer

inspection, one of the four claims turns out to be less plausible than it might have initially seemed. Let us therefore look at the possible escape routes from the quadrilemma.

#### 4. Escape routes from the quadrilemma

I will now show that, while the four claims are mutually inconsistent, any three of them can be simultaneously true. I will illustrate this by showing that different existing metaphysical theories of consciousness differ in which of the claims they retain, and which they give up.

##### 4.1. *Giving up first-person realism*

In the analytic philosophy of consciousness, the most common strategy to avoid the quadrilemma is to reject the idea that there are genuinely first-personal facts and to insist that the first-person/third-person distinction is not a distinction at the level of facts but only a distinction at the level of language or cognitive representation.<sup>7</sup> According to this view, there can be different modes of presentation of certain facts, such as first-personal and third-personal modes of presentation, and these correspond to different ways of linguistically describing the facts that are being represented, but the facts themselves are always the same. So, the fact that I am in a particular conscious state is just the fact that Christian is in that state. I might have access to a special mode of representing this fact, which you do not have access to, but there is no further fact here. There is no first-person fact that *I* am in the conscious state in question as distinct from the third-person fact that Christian is in that state.

If we accept the idea that facts are always impersonal or aperspectival – not endowed with any perspective – then there is no longer any problem in embracing the view that the totality of facts about different subjects' conscious states can be co-instantiated in a single, objective, and non-fragmented world. There will only be facts of the form 'Christian is in conscious state X' and 'Christian's interlocutor is in conscious state Y', which are perfectly compossible. Most standard theories in the analytic philosophy of consciousness are committed to a version of this view, whether explicitly or implicitly.

Physicalist views – whether reductive or non-reductive – obviously fall into this camp, but so do dualist views – whether of the traditional Cartesian sort or of the updated naturalistic variety defended by Chalmers (1996) – and arguably also the various recently influential Russellian, neutral, or double-aspect monist views. (For a good overview of the theoretical landscape, see Chalmers 2010.) Although these theories differ in many respects, one often-overlooked commonality among all of them is that they assume that there is a single objective and non-fragmented world, in which certain properties are instantiated (some of which may be fundamental while others may be derived), and they all try to give us an 'inventory' of those properties. The differences between the theories lie in the details of this inventory. The theories give us different answers to questions such as the following: Are there only physical properties or also phenomenal ones? Do phenomenal properties supervene on physical ones or not? Is

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<sup>7</sup> I have discussed this objection to first-person realism in more detail in List (2023b). The objection is influenced by an approach to the semantics of indexicals (Kaplan 1989), according to which indexical sentences (of which a first-person sentence is a special case) express non-indexical propositions once we fix the context of utterance.

there more than one kind of fundamental property? However, all those theories – under this standard framing, presented by Chalmers and others – support non-solipsism, non-fragmentation, and one world, and, in consequence, they must reject first-person realism, regardless of whether their proponents explicitly acknowledge this. Some people might have thought, for instance, that dualism can accommodate first-person realism, but it should be clear that at least the standard forms of dualism – by upholding non-solipsism, non-fragmentation, and one world – are committed to rejecting first-person realism.

Of course, all of the mainstream theories, except so-called illusionist theories (a special subset among the physicalist ones, e.g., Frankish 2016), will insist that they are realist with respect to consciousness. Nevertheless, my analysis makes clear that by denying first-person realism, they are committed to a form of anti-realism about genuinely first-personal facts. Whether one considers this a feature or a bug of those theories depends on one’s stand towards first-person realism.

Interestingly, even some of the scholars whose ideas I quoted when I made an initial intuitive case for first-person realism, such as Baker, Chalmers, and Nagel, tend to self-identify as proponents of some of the mainstream theories, such as dualism or – on some readings of Nagel – non-reductive physicalism.<sup>8</sup> If the mainstream theories are indeed committed to non-solipsism, non-fragmentation, and one world, those scholars must then ultimately ‘own up’ to the denial of first-person realism or reject at least one of the other three claims. I suspect that Chalmers would readily admit his rejection of first-person realism despite his emphasis on the importance of explaining first-person data, and he might try to make this position palatable by pursuing the above-mentioned strategy of reconstruing the first-person/third-person distinction as a distinction that is not at the level of facts. It is worth noting that, in the earlier quote and in the rest of the article from which it is taken, Chalmers speaks of “first-person data” rather than “first-person facts”. Moreover, Chalmers might suggest that the phenomenal/physical distinction, which he usually draws in terms of properties, is more central to the problem of consciousness than the first-person/third-person distinction, which I have here drawn in terms of facts. So, he can consistently retain non-solipsism, non-fragmentation, and one world. By contrast, it is less clear to me what Baker and Nagel would say. Both seem explicitly committed to recognizing the existence of irreducible first-person facts, and so the quadrilemma would force them to give up one of the other claims.

#### *4.2. Giving up non-solipsism*

A relatively uncommon but coherent strategy to avoid the quadrilemma is to give up non-solipsism and to accept that there is just one first-personally conscious subject, namely myself. While this strategy has received only limited attention in the philosophical debate on consciousness, one well-developed theory along these lines is Caspar Hare’s ‘egocentric presentism’ (2007, 2009). This is a fairly radical theory according to which I, as a conscious subject, live in my own ‘subject world’, defined as

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<sup>8</sup> I thank an anonymous reviewer for prompting me to address this point.

‘a world in which there are functionally sentient creatures, the experiences of one and only one of which have the monadic property of being-present’ (Hare 2007: 366).

In my subject world, there are other sentient creatures in a purely functionalist sense – that is to say, they display the functions of cognition and awareness – but their conscious experiences are not present.

Egocentric presentism is an instance of what Benj Hellie (2013) calls an ‘inegalitarian’ (or I prefer to say: ‘asymmetrical’) theory of consciousness. It draws a structural distinction between my own conscious experiences, which are first-personally present to me, and the conscious experiences of others, if any, which are first-personally inaccessible to me and ‘absent’ from where I stand.

According to Hare’s ‘egocentric presentism’, it may be true, in my subject world, that I am not the only one in pain, and that other sentient beings can be said to be in pain too, where this is understood in some third-personal and functionalist sense. However, Hare writes:

‘For an egocentric presentist, the situations are not symmetrical. It’s not that my pain is present to me and his present to him. Mine is present and his is absent’ (2007: 372).

This should illustrate why egocentric presentism has a solipsistic character. Indeed, Hare writes:

‘an egocentric presentist believes that only one subject world exists. There are no other subject worlds’ (2009: 41).

At most, Hare seems to suggest, we may *hypothetically imagine* the subject worlds of others, for instance when we think about what things would be like from another person’s perspective, but those other subject worlds are sorts of fictions.

Evidently, Hare’s theory has no difficulty supporting first-person realism, non-fragmentation, and one world, insofar as it postulates that there is a single non-fragmented world, namely my own subject world, which moreover encompasses all my first-personal facts. But the cost is a form of solipsism.

Many of us will find this hard to swallow. Of course, strictly speaking, none of us have any ‘hard’ evidence that others have conscious first-personal experiences too. The hypothesis that others are zombies is empirically unfalsifiable. However, symmetry considerations – in the scientific sense of symmetry – make it implausible to think that I am the only first-personally conscious being, not to mention how morally troubling and/or lonely such a solipsistic scenario would feel (for discussion, see again Avramides 2020).

Hare himself recognizes the peculiar solipsistic character of his theory. Commenting about how things were before he was born, he writes:

‘Isn’t it amazing and weird that for millions of years, generation after generation of sentient creatures came into being and died, and all the while there was this absence [i.e., no conscious experiences were ever first-personally present], and then one creature, CJH [Caspar Hare], unexceptional in all physical and psychological respects, came into being, and POW! Suddenly there were present experiences!’ (2009: xv)

Still – and to his credit, from the perspective of philosophical coherence – he bites the bullet and embraces the noted implications.

#### 4.3. *Giving up non-fragmentation*

A third strategy to avoid the quadrilemma, supported by some first-personal realists (including Lipman 2023, more on this in Section 5 below), is to give up the claim that any world – whether actual or possible – consists only of compossible facts. The result would be a theory according to which a world can be internally fragmented. A ‘world’ can then be such that only some proper subsets of the facts populating that world – ‘fragments’ of the world – can be jointly instantiated. Any such fragment would be an internally coherent (‘compossible’) collection of facts, but there would be no coherence (‘compossibility’) across different fragments.

Kit Fine (2005) describes – without endorsement – a theory along these lines, which he simply calls ‘first-personal realism’. He writes:

‘The first-personal realist believes that there are distinctively first-personal facts. Reality is not exhausted by the ‘objective’ or impersonal facts but also includes facts that reflect a first-person point of view’ (Fine 2005: 311).

Fine’s theory explicitly accommodates first-personal facts and distinguishes them from third-personal ones, thereby supporting the first of my four claims above, which I have labelled ‘first-person realism’. However, a difficulty with the theory, which Fine recognizes, is that if reality includes such first-personal facts, and it includes them for both you and me (which he finds more plausible than the solipsist alternative), then reality must somehow be fragmented. At least under the widely held assumption that ‘reality’ and ‘the world’ are more or less synonymous, in the sense that reality consists of only one world, the theory described by Fine upholds one world while giving up non-fragmentation. This is broadly how Fine presents the theory (or at least the version of it that he conditionally recommends, *if* one is inclined to accept realism about first-person facts): he describes it as ‘fragmentalist’.

If we go with this framing of the theory, however, there is a significant theoretical cost. Non-fragmentation is a key tenet of the standard understanding of what a world is, both in metaphysics and in logic, and postulating fragmented worlds would require a significant revision of the way we think about worlds in philosophy, logic, and scientific modelling.

Still, as an anonymous reviewer has also noted, if we are serious about accepting the existence of irreducible first-person facts, and we accept their existence for both you and me, then it is no longer clear whether non-fragmentation is plausible. And so, perhaps, it is not too far-fetched for a first-person realist who is not a solipsist to reject non-fragmentation.

#### 4.4. Giving up one world

A fourth route out of the quadrilemma is to give up the claim of one world. This route has so far been relatively marginal in the philosophical debate about consciousness, but one recent theory that takes it is the ‘many-worlds theory of consciousness’, presented in List (2023a), which could also be called the ‘many-centred-worlds theory of consciousness’. Earlier works that have given up the assumption of one world and defended metaphysical or epistemological theories without it – also in the context of the mind-body problem – include Vacariu (2005), proposing ‘epistemologically different worlds’, Honderich (2014), proposing distinct ‘subjective physical worlds’, and Gabriel (2015), suggesting a metaphysical picture without the notion of a single world as a totality of everything. As I tentatively prefer the ‘many-worlds’ response to the quadrilemma to the other responses (denying first-person realism, non-solipsism, or non-fragmentation), I will explain it in a bit more detail, without fully defending it. Admittedly, it is a counterintuitive route.

To introduce the basic idea, it is helpful to recall Hare’s ‘egocentric presentism’. One can think of that theory as combining

(a) the thesis that each conscious subject has their own subject world

with (b) fictionalism about the subject worlds of others.

The combination of (a) and (b) is, of course, consistent with the idea that there is a single non-fragmented world, namely my own subject world. But as noted, the price to pay for this is the theory’s solipsistic character. We can avoid this solipsism and still retain non-fragmentation if we accept a version of (a) while replacing (b) with a form of realism, rather than fictionalism, about the subject worlds of others. This requires us to postulate many different ‘subjective worlds’, one for each conscious subject. The ‘many-worlds theory of consciousness’ does just this. It has two core features:

- It rejects the assumption that the first-person facts associated with different subjects’ conscious experiences hold at one and the same world; instead, it associates different subjects with different ‘first-personally centred worlds’, which coincide with respect to all third-person facts but differ with respect to some first-person facts.
- It embraces a special form of modal realism, according to which different subjects’ first-personally centred worlds are all real, but only one of them is present for each subject.

As I will now explain, these ideas lend themselves to a neat formalization. The formal framework of ‘centred worlds’ (a notion that goes back to W. V. Quine and David Lewis and is sometimes employed to capture indexical content) can be adapted and re-interpreted to represent first-personally centred worlds.

To sketch this formalization (drawing closely on the exposition in List 2023a), I first define the notion of a ‘third-personal world’. A ‘third-personal world’ – call it  $\omega$  – is a complete collection

of third-person facts. It comprises all facts that hold at that world from a third-person perspective and that are thereby invariant under shifts in subjective perspective. One could also think of those facts as impersonal facts and use the term ‘impersonal world’ instead of ‘third-personal world’. The underlying fact-based definition of a world, in turn, goes back to Wittgenstein’s characterization of ‘the world’ as ‘everything that is the case’ (1922: prop. 1). According to it, a ‘world’ is simply the total collection of facts that hold in that world. A third-personal world, as I am defining it, subsumes all facts that hold third-personally or simply impersonally. Roughly speaking, this encompasses all facts that would feature in a complete, exhaustive description of that world by an omniscient but external observer – an observer taking what Thomas Nagel (1986) calls ‘the view from nowhere’.

However, the collection of facts making up a third-personal world – i.e., the collection of all facts that hold third-personally or impersonally in that world – does not contain any subject’s first-person facts, such as the fact that *I* am in a particular conscious state right now. What perspective one occupies in relation to the given third-personal world is left open by it. As already noted in Section 3, even from complete third-personal information about who experiences what, it would not follow who *I* am and what perspective *I* occupy inside that world. These questions are not settled – but are left underdetermined – by the totality of all third-person facts.<sup>9</sup>

To place a subject such as myself in the world, we must introduce something in addition to the third-personal world  $\omega$ , namely a ‘locus of subjectivity’ inside it. I call this  $\pi$ . It encodes a subject’s first-person perspective on  $\omega$ . A ‘first-personally centred world’ is then defined as an ordered pair  $\langle \omega, \pi \rangle$  consisting of a third-personal world  $\omega$  and a perspective  $\pi$ .

Formally, this definition is an instance of the standard definition of a ‘centred world’, as previously defined by Quine and Lewis: an ordered pair consisting of a standard, ‘uncentred’ world and some ‘location’ or ‘centre’ in it (Liao 2012). However, ‘centres’ are traditionally understood as something quite narrow: they are usually taken to be mere spatio-temporal coordinates or pointers to an individual in the world, like the dot indicating one’s location on a map. The many-worlds theory of consciousness requires us to understand ‘centres’ as something richer, namely as encoding a subject’s entire first-person perspective on a world, in as much detail as needed for the pair  $\langle \omega, \pi \rangle$  to encode the totality of facts – third-personal and first-personal – about the world  $\omega$  from the subjective perspective given by  $\pi$ .

A subject’s first-personally centred world thus encompasses everything that is the case for that subject, which includes everything that is the case subject-invariantly and also everything that is the case for that subject alone. Among other things, this encompasses the totality of first-personal experiences of that subject, as first-personally presented to them. Generally, first-person facts hold only at first-personally centred worlds, not at third-personal ones. This is in

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<sup>9</sup> As Benj Hellie (2013) notes, even the totality of facts about who experiences what leave open the question of which of these experiences are *mine* and why. He calls the unanswered question the ‘vertiginous question’.

line with Lynne Rudder Baker's above-quoted observation that a 'centerless world' wouldn't accommodate a subject's first-person perspective; only a suitably centred world does.

The notion of a 'first-personally centred world' resembles Hare's notion of a 'subject world', although its definition is more abstract and not dependent on Hare's specific views about 'presence'. Moreover, a 'third-personal world' corresponds to an equivalence class of first-personally centred worlds that are equivalent with respect to all third-personal facts but may differ with respect to the locus of subjectivity. Facts are objective if they are invariant under all shifts in locus of subjectivity, and subjective if they vary with some such shifts.<sup>10</sup>

If we wanted to represent facts by means of propositions, we could do so (as already mentioned in footnote 3), but we would have to use *first-personally centred propositions* (sets of first-personally centred worlds) to represent first-person facts, while we could use *uncentred propositions* (sets of third-personal worlds) to represent third-person facts. Specifically, any first-person fact could be represented by the first-personally centred proposition given by the set of those first-personally centred worlds  $\langle \omega, \pi \rangle$  such that the fact holds at  $\omega$  from perspective  $\pi$ . Any third-person fact could be represented by the uncentred proposition given by the set of those third-personal worlds  $\omega$  at which the fact holds, without having to refer to any perspective. This formalization makes it clear that first-person facts are, in an important sense, more fine-grained than third-person facts: the full 'locus' at which they hold is always a first-personally centred world, not a third-personal or impersonal world.<sup>11</sup>

Unlike Hare's egocentric presentism, the many-worlds theory does not assert that only my own first-personally centred world is real, while those of others are fictional. Instead, it adopts a 'modal realist' commitment to the reality of others' first-personally centred worlds. As noted, it asserts that there are many 'parallel' first-personally centred worlds, all of which are real, but only one of which is present for each subject.

According to this theory, then, your first-personally centred world is as real as mine. Yet, my first-personally centred world is present for me, and yours is present for you. This picture is structurally similar to David Lewis's realism about possible worlds (1986), though applied to first-personally centred worlds, instead of third-personal or impersonal ones, and with worlds defined in the (Wittgenstein-inspired) fact-based way explained earlier.

It should be clear that the many-worlds theory supports first-person realism, non-solipsism, and non-fragmentation, while giving up the one-world picture of reality and replacing it with a

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<sup>10</sup> This criterion also re-confirms that the facts described by (1\*) and (2\*) above are objective or third-personal, despite the first-person clauses that are embedded or quoted within their descriptions, while the facts described by (1) and (2) are subjective or first-personal.

<sup>11</sup> In this framework, a first-personal sentence such as 'I am in conscious state X' can be taken to express a first-personally centred proposition, given by the set of all first-personally centred worlds  $\langle \omega, \pi \rangle$  at which the sentence is true. By prefixing a first-personal sentence such as 'I am in conscious state X' with the operator 'from perspective  $\pi$ , it is true to say', we can then retrieve a 'third-personalized' sentence whose content is the uncentred proposition given by the set of third-personal worlds  $\omega$  which, when combined with perspective  $\pi$ , yield a first-personally centred world  $\langle \omega, \pi \rangle$  at which the embedded first-personal sentence is true.



picture in which there are as many first-personally centred worlds as there are conscious subjects. These differ not in their ‘reality’, but just in their ‘presence’ or ‘accessibility’ for each subject.

## 5. Concluding discussion

My aim has been to discuss an under-appreciated quadrilemma for theories of consciousness. Although I have noted my tentative preference for the fourth route out of the quadrilemma over the first three (see also List 2023a), I have not sought to defend this route here. Indeed, I think that there are serious arguments for each of the four routes, and my aim has been merely to show that the quadrilemma offers a map of some of the metaphysical disagreements at issue.

In fact, the quadrilemma can be used to derive formally valid arguments in support of each of the competing routes. This is because, from any triple of the four claims, one can infer the negation of the fourth. For instance, those who reject first-person realism can argue for their view by accepting non-solipsism, non-fragmentation, and one world as premises. Proponents of a solipsist view along the lines of Hare’s egocentric presentism can use first-person realism, non-fragmentation, and one world as premises. Fragmentalists of the kind described by Kit Fine can use first-person realism, non-solipsism, and one world as premises. And finally, proponents of a many-worlds theory can use first-person realism, non-solipsism, and non-fragmentation as premises. All four arguments are formally valid, in the sense that their premises entail their conclusions, but which argument, if any, we consider sound depends on where we stand in the debate on which of the four claims to uphold and which to give up.

Others have equally engaged with the challenge of reconciling a number of initially plausible but ultimately conflicting claims that we might like a metaphysical theory of consciousness to support. In his discussion of first-personal realism, for instance, Kit Fine (2005) contrasts and compares several different versions of such a theory before conditionally recommending broadly the ‘fragmentalist’ version summarized above. He discusses, for instance, a contrast between ‘standard’ and ‘non-standard’ versions of such a theory and between ‘fragmentalist’ and ‘relativist’ ones. While the distinctions associated with my four claims do not map exactly onto Fine’s, my general investigation still very much echoes his.

Similarly, Benj Hellie (2013) is well aware of the challenges raised by the quest for a coherent theory of consciousness which takes the asymmetry between a subject’s own conscious experiences and those of others seriously and does not leave certain explanatory gaps open, such as Hellie’s ‘vertiginous question’ of why *I* am having my conscious experiences and not those of anyone else – a question that remains unanswered by the totality of all third-personal facts about the world.

Thirdly, Giovanni Merlo’s discussion of ‘subjectivism about the mental’ (2016) raises many related issues. Merlo’s subjectivism asserts that ‘one’s own mental states are metaphysically privileged vis-à-vis the mental states of others, even if only subjectively so’ (2016: 311) and entails a form of realism (albeit a ‘subjectivist’ one) about first-person facts. Furthermore, Merlo seems (implicitly, at the very least) aware of the fact that this kind of first-person realism

cannot be consistently combined with the claims I have called ‘non-solipsism’, ‘non-fragmentation’, and ‘one world’, so that at least one of these claims must be dropped. I am less sure about which of these claims Merlo would drop.

On one interpretation, Merlo leans towards a less radical form of ‘solipsism’ that is nuanced enough to assuage some of solipsism’s implausibility. Quoting Fine’s remark that ‘[i]t seems quite bizarre to suppose that, from among all the individuals that there are, the subjective world-order is somehow oriented towards me as opposed to anyone else’ (2005: 313), Merlo (2016: 324) asks:

‘Doesn’t [subjectivism about the mental] deserve the same “incredulous stare” with which I look at other far-fetched and outlandish philosophical theses?’

In answer, he writes:

‘[T]he kind of inegalitarianism implied by SVM [Subjectivism about the Mental] is not so far-fetched and outlandish as a superficial understanding of the view might suggest. If SVM is true, reality is, indeed, oriented towards a single point of view. But remember that, given Subjectivism, reality is not objectively the way it is, so which point of view gets to be privileged is, itself, a subjective matter. The claim is not that my point of view is firstpersonal from every point of view, but only that it is firstpersonal – that the way things have always appeared to me to be (this individual being special [...]) is also the way things are. SVM, then, is inegalitarian, but in a subtler – and, I think less incredible – way than would justify me to dismiss it out of hand.’ (Merlo 2016: 324)

My inclination is to read this as affirming a subtle way of relaxing non-solipsism, though Merlo’s position appears to be also compatible with the retention of non-solipsism and the relaxation of either non-fragmentation or (perhaps) one world. In a footnote, he adds the following qualification:

‘[T]here might be ways to reconcile the thesis that the totality of facts is oriented towards one point of view with the idea that, most fundamentally, all points of view are metaphysically on a par. One option would be to adopt a conception on which the totality of what is most fundamentally the case extends beyond the totality of facts [...] Alternatively, one could take all points of view to be on a par vis-à-vis truth simpliciter by treating them as different ‘fragments’ of an overall incoherent totality of facts [...] My own preference goes to the first strategy – the second runs the risk of undermining the sense in which I am special vis-à-vis all other subjects’ (*ibid.*).

Evidently, the challenge outlined by Merlo is related to the challenge of responding to the quadrilemma I have discussed.

Fourthly, and more recently, Lipman (2023) has also argued that ‘there is something essentially subjective about conscious mental states’ and that ‘reality is constituted by subjective facts’

(2023: 531) and discussed the challenges raised by such a view. For Lipman, ‘subjects are metaphysical standpoints’ in the sense that

‘[a] subject is something relative to which certain facts can be said to obtain. Such facts obtain – are bits of reality – from the standpoint of the subject’ (2023: 532).

On this picture,

‘any conscious mental state is accompanied by a fact of the form  $@s(p)$  and a fact of the form  $p$ ’,

where ‘ $@s(p)$ ’ means that  $p$  holds from the perspective of subject  $s$ . For instance,  $p$  could be the fact ‘I am in conscious state X’, and  $s$  could be Christian. Then ‘ $@s(p)$ ’ means that  $p$  holds from Christian’s perspective. The key metaphysical question, for Lipman, is how the two facts,  $p$  and  $@s(p)$ , are related, and different answers to this question reveal the kinds of tensions I have discussed in this paper. One answer, which Lipman himself leans towards, is to accept the principle he calls ‘unrestricted factivity’, according to which ‘for any  $p$  and any  $s$ , if  $@s(p)$ , then  $p$ ’ (2023: 549). As Lipman notes, this entails a fragmentalist picture along Fine’s (2005) lines. In effect, unrestricted factivity implies that whenever the (third-personal) facts that I earlier described by (1\*) and (2\*) obtain, then the (first-personal) facts that I described by (1) and (2) must also obtain, and these are non-compossible.

Other answers to Lipman’s question can avoid this fragmentalism, but possibly at the expense of entailing a form of solipsism. The principle of ‘factivity restricted to oneself’, for instance, asserts that ‘for any  $p$  and any subject  $s$ , if  $@s(p)$  and  $s$  is oneself, then  $p$ ’ (2023: 549). As Lipman observes,

‘[i]f one restricts factivity to what obtains relative to oneself, one obtains a solipsist-like or ‘metaphysically centred’ picture according to which the world is in accord with that it is like from your own standpoint only’ (2023: 550),

a view he attributes to Hare (2009) and Merlo (2016). Thus, Lipman, too, can be interpreted as tackling the conflict between some of the metaphysical claims I have discussed here.

The present review of earlier contributions to the literature should illustrate that the tensions captured by the identified quadrilemma have already manifested themselves in the existing debate about the metaphysics of consciousness and especially in the debate about the status of the first-person perspective. I hope, therefore, that making the quadrilemma fully explicit will be useful.

Finally, I want to note that the quadrilemma is relevant to the question of what a scientific explanation of consciousness could look like. It will make a difference to the structure of such an explanation how we answer the following questions:

- (1) Does the *explanandum* include some first-personal facts for every conscious mind?
- (2) Are there other conscious minds?

- (3) Is the world internally coherent as opposed to internally fragmented?  
 (4) Is there one ‘objective’ world as opposed to several ‘subjective’ ones?

Crucially, giving a ‘yes’ answer to all four questions appears to be incoherent. Depending on which of the four questions we answer in the affirmative and which in the negative, we are likely to arrive at different approaches to accommodating consciousness within a scientific worldview. Evidently, then, the identified quadrilemma matters, and it challenges us to come up with a coherent combination of answers to questions (1) to (4).

### Acknowledgements

This paper is a sequel to, and draws on, List (2023a, 2023b). It is based on material first presented as part of the online Wendy Huang Lectures on ‘What’s wrong with physicalism’ at the National Taiwan University, June 2023. There I presented the quadrilemma as a trilemma, taking as given the first of the four claims (‘first-person realism’), which I had already defended in the run-up to introducing the conflict between the other three claims. I am grateful to the participants for helpful comments, especially the discussants at these lectures, Lok-Chi Chan, Tony Cheng, Ye Feng, Shao-Pu Kang, Plato Tse, and Wenjun Zhang. I have also benefitted from discussions with Jonathan Birch, David Chalmers, Caspar Hare, and Anna Mahtani and with audiences to whom I presented this and related works. Finally, I thank the anonymous reviewers of the present paper and of my previous paper (List 2023a) for helpful comments.

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