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**Teze disertační práce**

Consciousness in Nature. A Russellian Approach

Vědomí v přírodě. Russellovský přístup

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This doctoral thesis attempts to provide a philosophical answer to the question of how phenomenal consciousness, or experience, can exist in the physical world, i.e. in the world as it is described by science. The thesis consists of three parts: In the first part (chapter 1), I introduce the concept of consciousness which I focus on in the thesis and set my project against the background of a more general philosophical endeavour of trying to construct a stereoscopic view of man, as envisioned by Wilfrid Sellars. In the second part of the thesis (chapters 2 to 4) I provide a detailed discussion and evaluation of the attempts at a materialist reduction of consciousness. In the third and final part of the thesis (chapters 5 to 7), I explore the non-reductive alternatives to materialism, namely emergentism and Russellian monism.

One can view the thesis as an extended argument for an approach to consciousness which I call constitutive Russellian panpsychism and which is introduced in chapter 6.<sup>1</sup> We can say then that the thesis has the basic form of an argument to the best explanation as I proceed by considering – and ultimately rejecting – the various competing explanations of consciousness to eventually arrive at constitutive Russellian panpsychism as the view which, as I argue in detail in chapter 6, holds the most promise. In what follows I shall sketch the main steps of the argument advanced in the thesis in a somewhat more succinct manner.

## 1.

The concept of consciousness which primarily interests me in the thesis has been brought to the attention of philosophers of mind by Thomas Nagel. According to Nagel, an organism is conscious iff there is something it is like to be that organism for that organism.<sup>2</sup> Nagel's definition of consciousness thus suggests that an organism is conscious iff it possesses what we can metaphorically call its own *subjective point of view*. Intuitively, a subjective point of view is possessed by e.g. rabbits, dogs, apes and humans but not by e.g. chairs, mountains or dandelions. It is natural to say that the organisms which are conscious in Nagel's sense have – when they are conscious – experiences, i.e. conscious states featuring or phenomenal properties, or simply qualia.<sup>3</sup>

It is easy to think that the existence of consciousness in this sense provides us with at least a *prima facie* reason to cast doubt on the attempts to reduce consciousness to a physical or functional process. If we consider, after all, what we currently know about the neural processes in our brains, we will see no immediate reason to think that any of these processes involve phenomenology. The

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1 This general shape of the argument is inspired by Strawson (2006).

2 Nagel (1974, p. 436).

3 I explain these notions in chapter 1 and discuss some critiques of the properties they refer to in chapter 2.

kinds of facts which neurobiology tells us about the brain are, roughly, facts about neurons and their intricately structured causal interactions. These facts, however, give us no immediate reason to think that the brain involves or phenomenology or gives rise to it. The apparent distinctness of consciousness from all neurobiological facts seems to make the phenomenon of consciousness strangely immune to the standard methods of cognitive science which are much better suited to explaining mental capacities such as learning or appropriately reacting to stimuli. Standardly, these capacities are defined as functions and, thereafter, the neural mechanism responsible for their implementation is searched for. It is, however, far from clear that consciousness with its phenomenology is definable in purely functional terms. It is this peculiar immunity of consciousness to standard methods of cognitive science which has led Chalmers to call consciousness the “hard problem” and classify mental capacities – which he views as susceptible to the standard methods of cognitive science – as the “easy problems”.<sup>4</sup>

## 2.

Considerations of this kind suggest that there is an epistemic gap between truths about consciousness (phenomenal truths) and physical truths.<sup>5</sup> The idea here is that there is no a priori entailment between physical and phenomenal truths, even if we knew all the truths of completed physics, were ideal reasoners and had sufficient time for reflection. In chapter 2, I argue in detail for the claim that there is an epistemic gap, appealing to Frank Jackson's Mary who, intuitively, learns a new phenomenal truth upon being released from her black-and-white room.<sup>6</sup> I also appeal to the fact that one can arguably conceive of philosophical zombies, creatures who are our physical and functional replicas without consciousness, even if one rejects their possibility.<sup>7</sup>

Once we accept that there is an epistemic gap, it is easy to be led to thinking that there is also an ontological gap, i.e. that consciousness is ontologically distinct from the physical world. Here the thought is that if Mary knew all physical truths and was an ideal reasoner but yet failed to know (before her release) a certain phenomenal truth, then the phenomenal truth concerning her experience of red would have to be non-physical which, arguably, means that there would have to be some non-physical facts. Similarly, as I try to show, there is a prima facie case for the link between ideal conceivability of zombies and their metaphysical possibility. If however, our physical

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4 See Chalmers (1995).

5 Chalmers (2010, p. 109).

6 Jackson (1982).

7 Chalmers (1996).

replicas without consciousness are metaphysically possible, then consciousness is clearly not physical.

There are two main ways in which physicalists can react to the claim that there is an epistemic gap. Some physicalists simply deny that there is an epistemic gap while other physicalists accept that there is such a gap but reject that the epistemic gap implies the existence of a metaphysical gap. The former strategy is adopted by those physicalists who hold that phenomenal truths are at least in principle a priori entailed by physical truths. This branch of physicalism is therefore called *a priori physicalism*.<sup>8</sup>

A different strategy is adopted by those physicalists who agree with the anti-physicalists that there is an epistemic gap but deny that the epistemic gap entails an ontological gap. In the key of conceivability, these physicalists hold that although  $P \& \sim Q$  is conceivable, it is not the case that  $P \& \sim Q$  is possible (Here  $P$  is the complete microphysical truth while  $Q$  is an arbitrary phenomenal truth such as that Jane is having a phenomenally red experience). There is thus, according to these philosophers, no a priori entailment between physical truths and phenomenal truths and yet phenomenal facts are physical facts. This version of physicalism is called a posteriori physicalism in the literature.<sup>9</sup>

The key challenge for the a priori physicalists is to show that there is no epistemic gap for which there is a strong intuitive case. Perhaps the most interesting arguments against the existence of the epistemic gap have been offered by Dennett, who argues that we should be sceptical of the existence of phenomenal properties or qualia. If his arguments are plausible, they show us that it is wrong to think that there is a special class of phenomenal truths, logically disconnected from physical truths and giving rise to the epistemic gap. Dennett attempts to cast doubt on the existence of qualia by trying to show that there are no properties of conscious experience which possess the second-order properties usually attributed to qualia.<sup>10</sup> According to Dennett, philosophers normally think of qualia as ineffable, private, intrinsic and directly apprehensible.<sup>11</sup> If, however, we reflect on the properties of our experience, we shall find, Dennett argues, no properties which would feature these second-order properties, i.e. we shall find no qualia. In chapter 2, I suggest a possible reply to Dennett's arguments.

Dennett, among other things, challenges the view that there are properties of experience which we

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8 See e.g. Lewis (1966), Armstrong (1968), Dennett (1991), Rey (1995).

9 See e.g. Papineau (2002), Loar (2002), Levin (2002).

10 By second-order properties I mean here properties of properties.

11 Dennett (2002, p. 229).

directly apprehend or are intimately acquainted with. The direct apprehension thesis is, Dennett argues – appealing to a series of thought experiments –, illusory as we are unable to even reliably establish whether or not our qualia, supposing that they exist, have changed over the course of time.

In reply, I argue that the direct apprehension thesis arguably does not require absolute certainty about the nature of our past qualia, especially when it comes to a more distant past. I suggest that the knowledge of our current qualia seems quite sufficient and nothing Dennett says gives us reason to reject that we know – with a high amount of certainty what our current qualia are like.

Dennett further challenges the claim that qualia, supposing that they exist, are intrinsic properties. He argues that qualia cannot be separated from our judgements about them and, in general, from our reactions to them.<sup>12</sup> If however, these judgements, Dennett argues, co-constitute our qualia, we should doubt the supposed intrinsicality of qualia.

I reply that the notion of intrinsicality which Dennett targets is not the most relevant in the context of the debate about the reducibility of consciousness. One can define *weakly intrinsic* properties as those properties whose nature is not fully relational, i.e. not fully reducible to the property's relations to other properties. It is not clear, however, that anything Dennett says casts doubt on the weak intrinsicality of qualia. Still, even the weak intrinsicality seems sufficient to cast doubt on the attempted functionalist reduction of consciousness and thus also on a priori physicalism in general. Moreover, I try to show that Dennett's case against a stronger version of the intrinsicality thesis can be resisted.

### 3.

The intuitive plausibility of the claim that there is an epistemic gap has motivated some physicalists to try to account for the existence of this gap in physical terms. In chapter 3, I explore an account along these lines which has been offered by Loar, the founder of the *phenomenal concept strategy*, a variety of a posteriori physicalism and perhaps currently the most promising physicalist approach to consciousness.<sup>13</sup> According to Loar, the existence of the epistemic gap results from the fact that we are able to conceive of our brain states via two logically independent sets of concepts: via the theoretical concepts of physics and via our phenomenal concepts which are understood by Loar as recognitional type-demonstrative concepts of a special sort.

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<sup>12</sup> Dennett (2002, p. 236–237).

<sup>13</sup> Loar (2002).

While the phenomenal concept strategy may seem to combine the best of dualism with the best of physicalism, according to Chalmers, whose critique I explore in chapter 3, the view brings about some serious drawbacks.<sup>14</sup> In particular, Chalmers argues that while Loar provides us with an explanation of the epistemic gap, he fails to properly explain why the epistemic gap does not lead to the ontological gap. In other words, we can say that while Loar explains why zombies are conceivable, he fails to properly justify his claim that zombies are, nevertheless, not metaphysically possible, which is of course a crucial tenet in his defence of a posteriori physicalism.

In particular, Chalmers argues that the denial of the metaphysical possibility of zombies in conjunction with the acceptance of their conceivability commits Loar and other a posteriori physicalists to the dubious doctrine of strong metaphysical necessity (or simply strong necessity).<sup>15</sup> Strong necessity needs to be distinguished from the weak necessity of Kripkean a posteriori necessities, such as “Water is H<sub>2</sub>O”. To see the difference, consider that if Kripke is right, the statement “Water is H<sub>2</sub>O” is true in all possible worlds considered as counterfactual. The statement, however only expresses a weak necessity as its negation will be true in a possible world in which the watery stuff in rivers and lakes is XYZ if this possible world is considered as actual. We can say, therefore, using the two-dimensional semantic framework introduced in chapter 3, that “Water is XYZ” expresses a primary possibility although a secondary impossibility. That means that weak necessities do not rule out the existence of any metaphysically possible world which is ideally conceivable, they only show us that certain descriptions of possible worlds are in fact misdescriptions. As such, however, weak necessities are, arguably, useless for the a posteriori physicalists.

If, on the other hand, strong necessities exist, they would help the a posteriori physicalists as they could then argue that while the zombie world is conceivable, it is not metaphysically possible, neither primarily, nor secondarily. Unfortunately for the a posteriori physicalists, however, argues Chalmers, strong necessities are extremely dubious as there is no independent reason to believe in them apart from – if a posteriori physicalism is true – the mind-body case.

I suggest that Loar's view can be defended against Chalmers's critique by offering a more charitable way of understanding Loar's project. On this understanding, Loar does not have the ambition to justify the metaphysical impossibility of zombies, but rather question the step from their conceivability to their metaphysical possibility. One could, after all, argue that if a posteriori physicalism is true, this step needs to be rejected. While this way of reading Loar may seem to

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14 Chalmers (1999).

15 Chalmers (1999, p. 489).

render his position plausible, I argue that even if Loar's project is understood in this more charitable way, it ultimately fails as a reply of this sort implicitly relies on the unexplained and unjustified existence of strong metaphysical necessity.

I conclude chapter 3 by considering another way in which the a posteriori physicalists could try to justify the doctrine of strong metaphysical necessity. This reply appeals to the thesis held by some philosophers of science that the laws of nature are metaphysically necessary even though nomologically different worlds are conceivable.<sup>16</sup> We would thus perhaps have another example of strong necessity independent of the mind-body case. I suggest that the metaphysical necessity of the laws of nature is of no help for the physicalists as it fails to establish that some logically possible worlds are not metaphysically possible. I conclude that strong metaphysical necessities should be viewed as a serious challenge to a posteriori physicalism.

#### 4.

In chapter 4, I consider another objection against the phenomenal concept strategy. Versions of this objection have been raised by Levine, Nida-Rümelin, Goff and others.<sup>17</sup> These thinkers argue that, phenomenal concepts a priori reveal to us rich knowledge of the nature of their referents and this knowledge is incompatible with the truth of a posteriori physicalism. I offer a new version of this type of argument, suggesting that we have a good reason to hold the *non-structural translucency claim*, according to which our phenomenal concepts a priori reveal to us more than merely structural knowledge of their referents, and that this claim is incompatible with a posteriori physicalism.

The argument starts from the claim that phenomenal concepts are non-opaque. This point has been recently emphasized by Goff who notices that we can refer to the property of feeling pain using the notion *being in pain* but also, for example, using the notion *the property Kevin is thinking about*, given that Kevin is thinking about the property of feeling pain.<sup>18</sup> The concept *the property Kevin is thinking about* is, as Goff emphasises, opaque and so it does not reveal to us a priori anything non-trivial about its referent, i.e. the property of feeling pain. Things look significantly different when it comes to the phenomenal concept *feeling pain*. If someone tells me, for example, that Pete is feeling

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16 See e.g. Bird (2005).

17 Levine (2007), Nida-Rümelin (2007), Goff (2011).

18 Goff (2011).

pain, I shall, it seems, know a priori, merely in virtue of having the concept, quite a lot about the unpleasant state which the concept *feeling pain* refers to and I shall perhaps, supposing that I care about how Pete is feeling, offer him a pain killer, etc. This, Goff argues, indicates that the phenomenal concept *feeling pain* is not radically opaque as it seems to provide us a priori with non-trivial knowledge of its referent.

Once we know that phenomenal concepts are not radically opaque, it is interesting to ask what kind of knowledge they reveal to us. Given, however, that phenomenal concepts plausibly do not refer to their referents via contingent modes of presentation (which renders them different from concepts, such as *water* or *the tallest man on Earth*, it seems that they must reveal to us at least some essential properties of their referents, i.e. they must be translucent.<sup>19</sup>

The general translucency claim, on its own, is not strong enough to cast doubt on a posteriori physicalism. We can see this if we consider the versions of a posteriori physicalism which rely on the hybrid view of phenomenal concepts, such as the ones introduced by Levin and Schroer.<sup>20</sup> These views can arguably make sense of a version of the translucency claim, according to which phenomenal concepts reveal to us a priori merely structural properties, broadly understood. We can call this version of the translucency claim the *structural translucency claim*.

I argue, however, that a stronger claim which I call the *non-structural translucency claim*, according to which our phenomenal concepts reveal to us a priori more than merely the structural features of their referents is available to the anti-physicalists. One way to establish this point is by considering, for example, the qualitative feel, or quale of slight migraine headache. It seems that the phenomenal concept which we use to conceive of this phenomenal state reveals to us a priori that the state features a highly specific kind of qualitative feel. The revealed knowledge can plausibly be expressed in the form of the thought “A migraine headache feels so and so”. Here *migraine headache* is a phenomenal concept which we typically acquire in virtue of having suffered from migraine, and *so and so*, another phenomenal concept, expresses the specific phenomenal way a migraine headache feels. We can see why this thought is plausibly a priori if we try to consider its negation – the thought “A migraine headache does not feel so and so”. This latter thought looks inconceivable at least as long as *migraine headache* is a phenomenal concept formed in virtue of attending to a specific phenomenal state of ours. At the same time, however, it is plausible that knowledge of the specific way the phenomenal state feels is not purely structural knowledge

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19 A similar point has been argued for by Nida-Rümelin (2007) whose argument I explore in detail in chapter 4 of the thesis.

20 Levin (2002), Schroer (2010).



because, as the a posteriori physicalists should agree, phenomenal feels seem to be something over and above pure structure. It seems reasonable to conclude therefore that phenomenal concepts are *non-structurally translucent* in the sense that they reveal to us knowledge of more than just the structure of their referents.

Can the a posteriori physicalists make sense of this stronger claim? As I see it, it is far from clear that they can. I argue that accepting the *non-structural translucency claim* commits the a posteriori physicalists to the implausible thesis of *dual revelation* and so the claim can be seen as a reason to cast doubt on a posteriori physicalism. I conclude chapter 4 by suggesting how results achieved in this chapter can be used to some objections against the results of chapter 3.

## 5.

Having concluded that there are strong reasons to be sceptical about the prospects of materialist reductionism, I explore, in chapters 5 to 7, the options opened for those who resist materialism but yet view consciousness as a part of nature and who thus strive to find a naturalistic but non-physicalistic account of consciousness. In Chapter 5 I focus on emergentism and in chapters 6 and 7 I discuss various forms of Russellian monism.

Emergentism is the view that consciousness is an ontologically new property which arises in certain highly complex physical systems. I first introduce the notion of emergence, arguing that the relevant variety of emergence for the purposes of my thesis is that of strong, or ontological emergence. I also consider various attempts to define emergentism, arguing against the prevalent tradition of widely epistemological definitions<sup>21</sup> that ontological emergentism is best defined in ontological terms<sup>22</sup>. Thereafter, I describe and evaluate the objections against emergentism raised by Strawson and Nagel.<sup>23</sup> I try to show that both arguments ultimately fail for the same reason – because they conflate matters of logical necessity with those of physical or nomological necessity. This problem has been expressed by James Van Cleve in his reply to Nagel's argument.<sup>24</sup> I argue that this objection also applies to Strawson's anti-emergentist argument.

While in the first part of chapter 5 I defend emergentism, I conclude the chapter on a sceptical note,

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21 Broad (1925), Chalmers (2005).

22 Barnes (2012), O'Connor – Wong (2005).

23 Strawson (2006), Nagel (1979).

24 Van Cleve (1990).

arguing that emergentism faces serious challenges which make the view implausible and which should motivate us to explore other non-reductive views. Namely, I argue that emergentism faces serious threats concerning the alleged causal interactions between physical reality and emergent, non-physical phenomenal properties. First I comment on the causal argument offered by David Papineau.<sup>25</sup> This argument has the following structure:

- (1) Conscious mental states have physical effects.
- (2) All physical effects are fully caused by physical processes.
- (3) Physical effects of conscious mental causes are not always over-determined by distinct causes.
- (4) Mental events are wholly grounded in physical events.

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(5) Physicalism is true.

If this argument is sound, it rules out ontological emergentism. I explore the ways in which the emergentists could resist its premises and conclude, that premises (1) to (3) could each be resisted, however, the theoretical costs are high in each case. The emergentist, we could say with Chalmers, thus face the trilemma of epiphenomenalism, interactionism, or causal overdetermination.<sup>26</sup>

I conclude the chapter by offering two more critical considerations against ontological emergentism. The first of these concerns the issue of how we are to understand the claim that a physical state causally affects a phenomenal state, which, according to the dualist version of emergentism espoused here, must be non-physical. It seems that we have here, once again, the commitment to the notoriously dubious interactionism on the side of the ontological emergentist. Given that we are dealing with two ontologically utterly distinct domains, the claim of upward causation or determination looks highly controversial.

The second, related consideration appeals to the thought that the ontological emergentist is committed to the view that emergent properties, despite being produced by the physical brain, must somehow appear as something out of nothing. Presumably, somewhere in the causal chain from the physical to the phenomenal, there will need to be a place where something radically new and non-physical comes into existence. Given that this new element will be non-physical, it will need to have nothing, ontologically speaking, to do with the preceding physical process, except, of course that it is, *ex hypothesi* caused by the preceding event. A claim of such radical ontological

<sup>25</sup> Papineau (2002, pp. 17–18).

<sup>26</sup> Chalmers (2015).

discontinuity, however, should be viewed, as I argue, as highly implausible.

## 6.

In chapter 6, I explore the framework of Russellian monism, the conception of consciousness in nature inspired by Russell's philosophy of science.<sup>27</sup> I characterise Russellian monism using the following four conditions:

- (1) Structural (or extrinsic) properties of microphysical entities are grounded in quiddities (or intrinsic properties).
- (2) Quiddities lie, even in principle, outside the reach of physics.
- (3) Quiddities play or occupy the roles defined by physics.
- (4) Quiddities have a close relation to consciousness.

These conditions appeal to the distinction between structural properties and quiddities. This distinction is based on the thesis that physics describes the micro-physical world purely in terms of their structural characteristics. Micro-physical entities are thus characterised by physics in terms of the roles they play in the physical world. An electron, for example, is defined, roughly, as an entity which attracts protons, repels other electrons, neither attracts nor repels neutrons, etc. The physical conception, we can say, captures the role-properties of the electron, or – which amounts to the same – its structural properties. The proponents of Russellian monism insist that the nature of fundamental micro-physical entities is, nevertheless, not fully exhausted by their role-properties.<sup>28</sup> They hold that there must also be quiddities, i.e. properties which play or realise the fundamental roles attributed to fundamental micro-physical entities by a fundamental physical theory.<sup>29</sup>

There are two basic options for the neo-Russellians when it comes to understanding the “close relation” between quiddities and consciousness as expressed by condition (4). Either the proponents of Russellian monism can hold that quiddities are micro-phenomenal properties, or they can hold that quiddities are micro-protophenomenal properties. Those who hold that quiddities are micro-phenomenal properties, subscribe to Russellian panpsychism. Those, on the other hand, who hold that quiddities are micro-protophenomenal properties (roughly, properties which are not themselves

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<sup>27</sup> Russell (1954).

<sup>28</sup> See e.g. Strawson (2006, p. 10).

<sup>29</sup> Chalmers (2015, p. 254).

phenomenal but which collectively constitute phenomenal properties), embrace Russellian panprotopsyism.

In chapter 6 I argue that the most promising version of Russellian monism is constitutive Russellian panpsychism, appealing to the Hegelian argument introduced by Chalmers.<sup>30</sup> In the course of defending this conclusion I, however, offer new arguments against the main competing views: emergent Russellian panpsychism and panqualityism.

I argue that apart from the issues with causal efficacy of emergent properties, emergent Russellian panpsychism, a version of which is defended, for example by Goff,<sup>31</sup> involves an implausible commitment to the view that there are certain macro-physical roles which are not realised by systems of micro-phenomenal properties. I call these physical roles “fundamental macro-physical roles” and argue that their existence is dubious.

With respect to panqualityism, I argue that its main versions, such as the one recently advocated by Coleman, are threatened by qualitative zombies.<sup>32</sup> The problem is that we seem to be able to conceive of a creature whose brain instantiates rich Edenic qualities, think colours, sounds, smells etc., without there being anything at all for the creature to be itself, to be conscious. Moreover, our conception will hardly be threatened if we add the intricate functional organisation of the kind which is, according to the HOT theory defended by Coleman, needed for awareness, into the picture. If such a scenario without consciousness is really conceivable, panqualityism is, after all, not immune to the conceivability argument. Coleman has recently tried to defend panqualityism against this sort of objection, but I argue that his reply does not quite work. While he, I think, manages to show that awareness involves no independent phenomenology, he does not quite manage to show, as I try to explain, that qualitative zombies without any phenomenology are inconceivable.

## 7.

I conclude the argument for constitutive Russellian panpsychism in chapter 7 by offering a sketch of a solution to the combination problem, i.e. the question as to how micro-phenomenal properties can combine to collectively produce macro-phenomenal properties. While the combination problem is perhaps the most serious challenge for constitutive Russellian panpsychism, I suggest that the

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30 See Chalmers (2015).

31 Goff (2015).

32 Coleman (forthcoming).

problem is not hopeless and that progress can be made on it if we appeal to the intuitive notion of *co-consciousness*.<sup>33</sup> Here we can understand co-consciousness as a relation between phenomenal properties, or qualia. We are often simultaneously aware of multiple phenomenal qualities which, is a way of saying that it is often the case that multiple phenomenal qualities are co-conscious, i.e. simultaneously experienced by a single conscious subject.

I suggest that we can view co-consciousness as a version of what Goff calls *phenomenal bonding*.<sup>34</sup> According to Goff, the micro-subjects posited by panpsychists enter, given that specific conditions are fulfilled, the relation of phenomenal bonding which is such that when two or more micro-subjects enter it, the resulting state of affairs necessitates that another, distinct subject comes into existence. It is natural, moreover, to view the relation of phenomenal bonding as a sort of relational quiddity realising some non-fundamental, physical relation. The relation of phenomenal bonding offers the panpsychist, I argue, a way to address the combination problem, at least when it is understood as a sort of conceivability argument.

I conclude with a proposal which we can call *phenomenal bonding constitutive Russellian panpsychism*. According to this proposal, physics describes the world in terms of particular micro-physical roles with some of these roles defining fundamental micro-physical entities while others define fundamental micro-physical relations. These micro-physical roles, the proposal goes, require quiddities for their realisation. While the roles corresponding to micro-physical entities require monadic quiddities, the roles corresponding to micro-physical relation require relational quiddities. Here, natural candidates for the monadic quiddities are phenomenal properties while a natural candidate for one sort of relational quiddity is the relation of co-consciousness.

The present proposal paints an interesting and noteworthy picture of the universe as it is a picture which integrates phenomenal consciousness into the world as it is described by physics. The proposal, as I see it, provides an account of macro-consciousness which is both non-reductive and naturalistic. It is non-reductive because it views the phenomenal features of consciousness as fundamental, not derivative from other, non-conscious existents, and it is naturalistic because it views consciousness as an integral part of nature which has a role in the causal chains in nature. Despite these significant merits, the recommended account brings about some worries and questions, some of which I try to tackle in the remainder of the chapter.

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33 See e.g. Dainton (2011, p. 251).

34 Goff (2009, forthcoming).

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