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From Physicalism to Experience and Return

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Introduction

Physicalism is a doctrine about the fundamental nature of reality. In a nutshell, it maintains that, at its most fundamental level, reality is wholly physical – where this claim is usually understood as holding that metaphysically fundamental entities are just theoretical entities posited by fundamental physics (e.g. micro-particles such as electrons, or theoretical properties such as having mass). Physicalism is something like an intellectual orthodoxy in contemporary analytic philosophy. Indeed, countless analytic philosophers overtly embrace it, and most contemporary research programs in our discipline are bound by physicalist constraints.

The huge success of physicalism is mostly attributable to three elements: physicalism is philosophically appealing, scientifically respectable and dialectically well-supported. To begin with, it is philosophically appealing qua ontologically parsimonious: in fact, physicalism posits just one kind of fundamental entities (viz. basic physical entities), and holds that all other entities are nothing over and above basic physical ones – in other words, physicalism is a kind of ontological monism. Furthermore, it is scientifically respectable, since its ontology is easily embeddable into the so-called scientific worldview – viz. that layered model of reality according to which high-level entities treated by special sciences (chemical entities, biological entities, social entities, etc.) are nothing over and above (complex systems of) entities treated by fundamental physics. Finally, it is dialectically well-supported, since there is an extremely powerful argument in its favor – viz. the causal closure argument, according to which physicalism is true since the physical realm is causally closed (where, roughly, the causal closure of the physical realm means that every caused physical phenomenon has a sufficient physical cause).

As much as any other intellectual orthodoxy, physicalism has been harshly criticized. Among the major anti-physicalist objections, so-called conceivability arguments stand out. In general, conceivability arguments move from the premise that a certain situation is conceivable and, taking advantage of an alleged link

between conceivability and possibility, conclude that such a situation is possible. Some conceivability arguments are physicalistically problematic, since they revolve around situations whose possibility would rule physicalism out. In particular, the most debated anti-physicalist conceivability arguments revolve around so-called zombie worlds – viz. worlds duplicating the actual one as far as basic physical entities are concerned¹, but devoid of consciousness. Conceivability arguments revolving around zombie worlds are known as zombie arguments.

Zombie arguments and other, anti-physicalist conceivability arguments as well jointly constitute the conceivability challenge against physicalism, a challenge which turns out to be successful only if at least one of these arguments is sound. Now, anti-physicalist conceivability arguments are clearly valid. Therefore, in order to call them into question, some premises of theirs must be questioned. There are two ways to achieve this goal: a standard strategy and a Russellian strategy. The standard strategy amounts to reject some premises leaving physicalism mainly unaltered. The idea is that physicalism should rebut the conceivability challenge without changing its basic outlook. On the other hand, the Russellian strategy amounts to reject some premises by altering physicalism in turn. The idea is that physicalism should rebut the conceivability challenge by changing its basic outlook – more precisely, by joining forces with another theory recently rose to prominence. This powerful ally is Russellian monism – roughly, a doctrine according to which some fundamental entities metaphysically constituting conscious experiences are such that physics is silent (in a certain relevant sense) about them². The resulting view (that is, the conjunction of physicalism and Russellian monism) is a fascinating, new brand of physicalism: Russellian physicalism.

This dissertation is mostly about Russellian physicalism and the Russellian strategy. Indeed, my main claim is that, all things considered, Russellian

¹ Worlds duplicating the actual one as far as basic physical entities are concerned are usually called «basic physical duplicates (of the actual world)». For more on them, see §1.2.1.

² This relevant sense is hard to spell out. I extensively try to make it clear in chapter 2. However, just to give a glimpse of the idea, the point is that physics characterizes its subject matter just functionally, so that functionally indiscernible entities cannot be distinguished from physics' viewpoint. However, according to Russellian monism, some fundamental entities (called «quiddities») are functionally indiscernible without being indiscernible *simpliciter*, so that such entities partly elude physics' grasp (they differ from each other, even if their differences are not graspable from physics' viewpoint).

physicalism is an extremely palatable option for physicalists, since it is both genuinely physicalist and immune to conceivability arguments (and to other, anti-physicalist arguments as well). Admittedly, Russellian physicalism has some unwelcome consequences too. Most importantly, it loosens the nexus between physics and physicalism, by holding that certain basic physical entities are beyond the scope of physics – so that even if, from a metaphysical standpoint, the fundamental level of reality remains wholly physical according to Russellian physicalism, it is also the case that, from an epistemic standpoint, such a level turns out to be beyond the reach of physics to a certain degree. This might sound quite anti-physicalist. However, I hope to make such a consequence as harmless as possible by the end of the dissertation. That said, before starting our journey through physicalism, conceivability arguments and Russellian monism, let's briefly sketch our path by summing up each chapter in turn.

Chapter 1 is about physicalism and anti-physicalist conceivability arguments. More precisely, in this chapter, I state and clarify both physicalism's main tenet – intuitive physicalism, according to which everything is nothing over and above basic physical entities – and some anti-physicalist conceivability arguments (especially focusing on zombie arguments). Furthermore, I show that, even if intuitive physicalism can be understood in several ways, conceivability arguments threaten it quite independently from exegetical niceties concerning its components.

Chapters 2-3 are about Russellian monism, Russellian physicalism and the Russellian strategy to rebut conceivability arguments. More precisely, in these chapters I try to build up a robust Russellian strategy to defend physicalism from conceivability arguments. This strategy consists of two steps:

- (a) physicalism should be enriched in a Russellian way – that is, it should be stated as the conjunction of intuitive physicalism with some key claims borrowed from Russellian monism (in other words, it should be stated as Russellian physicalism);
- (b) if physicalism is enriched in a Russellian way, then it is provided with resources to rebut conceivability arguments – indeed, Russellian physicalism is provided with resources to compellingly establish that their

first premises are highly doubtful and, hence, arguably rejectable.

Chapter 2 and chapter 3 are mainly devoted to establish (b) and (a), respectively. More precisely, in chapter 2, I deal with Russellian monism and Russellian physicalism; furthermore, I argue for (b), hopefully establishing it. Finally, in chapter 3, I evaluate Russellian monism. In particular, I argue that such a doctrine is quite likely, concluding that physicalists (as much as other metaphysicians and philosophers of mind) should endorse it – in other words, concluding that (a) is true.

Now that the global path has been sketched, let's finally begin our trip, starting with physicalism and anti-physicalist conceivability arguments.

Chapter 1

Physicalism and Conceivability

Physicalism is a metaphysically contingent a posteriori thesis about the fundamental nature of the actual world¹. Roughly, it maintains that everything is physical. However, such a crude wording is unsatisfying, since it overlooks a key distinction – viz. the distinction between basic physical entities (usually characterized as entities posited by fundamental physics) and derivative physical entities (usually characterized as entities which are nothing over and above basic physical ones)². This distinction is pivotal, since physicalism maintains that everything is physical in the sense that everything is either a basic or a derivative physical entity – or, equivalently, it maintains that the following claim is true:

(IP) Intuitive Physicalism

Everything (which is not itself a basic physical entity) is nothing over and above (*NOA* for short) basic physical entities³.

In this first chapter, I mostly deal with the problem of clarifying *IP*: the interpretation problem. This problem is usually approached via a theological metaphor⁴. Imagine God creating the physical world – that is, giving rise to all

¹ Doctrines about the fundamental nature of the actual world are metaphysical doctrines and metaphysical doctrines are usually taken to be (metaphysically) necessary or impossible. However, as David Lewis maintained, «[physicalism] is meant to be a contingent thesis, a merit of our world that not all other worlds share», Lewis (1983, 362). I follow Lewis in the main text, since his ideas on this point are widely shared – see, for instance, Piccinini (2017, §6).

² On this widely accepted distinction, see Dowell (2006a, 1).

³ Wilson (2005, 426) claims that «[all t]he many and varied formulations of physicalism instantiate [*IP*]». For an exhaustive list of references to such formulations, see Elpidorou (2018, footnote 5). That said, two clarifications are in order. First, although «is *NOA*» is often understood as identical to, it cannot be so understood in the context of *IP*. On this point, see footnote 41 in this chapter. Second, the parenthetical qualification in *IP* might sound pleonastic, since it might seem obvious that basic physical entities are *NOA* themselves. However, the qualification is not pleonastic as far as I can see, since it is not obvious that basic physical entities are *NOA* themselves. For instance, given that «is *NOA*» can be plausibly understood as being metaphysically grounded (for more on this interpretation, see §1.2.3), and that metaphysical grounding arguably is an irreflexive relation, it might be that basic physical entities are not *NOA* themselves after all.

⁴ The *locus classicus* of the theological metaphor is Kripke (1980, 153-154).

basic physical entities. Now, ask yourself: so doing, has God given rise to any entity whatsoever – e.g. biological entities, mental entities, social entities, etc.? If the answer is positive, then everything is *NOA* basic physical entities after all – that is, *IP* comes out true. On the other hand, if the answer is negative, then it is not the case that everything is *NOA* basic physical entities – that is, *IP* comes out false. In other words, *IP* seems true just in the case a creating God, giving rise to all basic physical entities, *ipso facto* gives rise to any entity whatsoever. Tim Crane wonderfully voiced this metaphor discussing the metaphysics of thought. Here it is his poetical wording:

IN THE BEGINNING God created the elementary particles. Bosons, electrons, protons, quarks and the rest he created them. And they were without form and void, so God created the fundamental laws of physics – the laws of mechanics, electromagnetism, thermodynamics and the rest – and assigned values to the fundamental physical constants: the gravitational constant, the speed of light, Planck's constant and the rest. God then set the Universe in motion. And God looked at what he had done, and saw that it was physicalistically acceptable. What more would God have to do to give someone a thought? Some philosophers [viz. physicalists] will say: nothing.⁵

Although the theological metaphor provides some grip on *IP*, it does not adequately clarify its meaning. Indeed, it involves notions (such as that of a creating God) which are quite obscure. Now, *IP* consists of three locutions: «everything», «is *NOA*» and «basic physical entities». Therefore, the interpretation problem can be usefully split into three sub-problems⁶:

- *The Quantification Problem*: *IP* claims that everything is *NOA* basic physical entities in the sense that everything belonging to a certain salient class is *NOA* basic physical entities, but what salient class is involved here? In other words, what does «everything» exactly mean in the context of *IP*?
- *The Dependency Problem*: *IP* claims that everything is *NOA* basic physical entities in the sense that everything metaphysically depends (in

⁵ Crane (1991, 235).

⁶ For such a threefold approach, see Montero in Garvey (2011, 92-101) and Menzies (2018).

some sufficiently demanding way) on basic physical entities, but what metaphysical dependency is involved here? In other words, what does «is *NOA*» exactly mean in the context of *IP*?

- *The Physicality Problem*: *IP* claims that everything is *NOA* basic physical entities in the sense that everything is *NOA* entities having a certain character, but what character is involved here? In other words, what does «basic physical entities» exactly mean in the context of *IP*?

In this chapter, I mainly tackle such exegetical problems, evaluating some notable solutions to them. Furthermore, I state and clarify some anti-physicalist conceivability arguments. In a nutshell, conceivability arguments are arguments based on conceivability premises. More precisely, they aim to establish modal conclusions (viz. conclusions about what is metaphysically possible) from epistemic premises (viz. premises about what is conceivable in a certain relevant sense). They jointly constitute the conceivability challenge against physicalism – and such a challenge is successful just in the case at least one of these conceivability arguments is sound.

Conceivability arguments are quite simple. Indeed, they uniformly exemplify the following schema:

Conceivability Arguments' Schema

(P1) *X* is conceivable;

(P2) whatever is conceivable is metaphysically possible;

(C) *X* is metaphysically possible.

Distinct conceivability arguments can be obtained by substituting distinct propositions to *X*. In particular, I focus on the so-called zombie argument (*ZA* for short), which can be obtained by substituting the description of a zombie world for *X* (where, roughly, a zombie world is a world duplicating the actual one as far as basic physical entities are concerned, but devoid of consciousness).

Finally, in this chapter I aim to articulate the relation between *IP* and conceivability arguments such as *ZA*. More precisely, I am going to highlight that *ZA* (if sound) undermines *IP* no matter how *IP* is exactly understood. Indeed, if

ZA is sound, then there is a metaphysically possible zombie world; however, if there is such a world, then a certain modal claim (viz. a certain supervenience claim) is false. Furthermore, such a modal claim is entailed by *IP* no matter how *IP* is exactly understood. Hence, if *ZA* is sound, then *IP* is false no matter how it is exactly understood. That's why physicalists fear zombies.

That said, before delving into exegetical issues, let's briefly stress three methodological points. First, the interpretation problem is the problem of finding a plausible analysis of *IP*, where an analysis of *IP* is just a definition of *IP* such that its *definiens* is conceptually equivalent to *IP* itself – that is, a biconditional «*IP* is true if and only if *D*» such that *D* is conceptually equivalent to *IP*⁷. Hence, throughout this chapter, I mainly examine some possible analyses of *IP*. Second, I mostly criticize *IP*'s interpretations arguing that their *definiens* are not conceptually equivalent to *IP* – i.e. they are not true at the same conceptually possible worlds at which *IP* should be true according to intuitions prevailing among contemporary metaphysicians (where a conceptually possible world is just a complete situation such that no true description of it is conceptually incoherent⁸). More precisely, I criticize an interpretation as too strong just in the case its *definiens* is false at conceptually possible worlds at which *IP* should be true, and as too weak just in the case its *definiens* is true at conceptually possible worlds at which *IP* should be false. Third and finally, speaking about possible worlds and modalities without further qualification, I mean conceptually possible worlds and conceptual modalities throughout this chapter (whereas in the next ones the relevant modality will be metaphysical instead). This policy has two grounds. To begin with, I deal with issues of conceptual equivalence here, and possible worlds most relevant to such issues arguably are conceptually possible worlds; moreover, in order to evaluate *IP*'s interpretations, I resort to possible worlds whose metaphysical possibility is doubtful (viz. worlds containing abstract entities, miracle-performing angels, God, etc.), so that it might be wiser to deem

⁷ I will usually resort to the truth-predicate in order to state *IP*'s interpretations – that is, I will usually discuss definitions exemplifying the following schema: «*IP* is true if and only if *D*». However, bear in mind that the truth-predicate occurs here just in a deflationary way – that is, in such a way that «*p*» and «*p* is true» are synonyms.

⁸ Two clarifications. First, the description of a situation is conceptually incoherent just in the case it is possible to derive a contradiction from it using just logical principles or conceptual truths. Second, my characterization of conceptually possible worlds is very rough; however, it is sufficient for my purposes. For a similar one (in a similar context), see Kirk (2005, 10-11).

such worlds as possible just in a weaker (viz. conceptual) sense. Now let's move to exegetical issues. In particular, let's start with the quantification problem.

1.1 The Quantification Problem

IP claims that everything is *NOA* basic physical entities in the sense that everything belonging to a certain salient class is *NOA* basic physical entities, but what salient class is involved here? In other words, what does «everything» exactly mean in the context of *IP*?

In the current section, I am going to examine some notable answers. First, I briefly discuss the unrestricted interpretation, rejecting it as too strong; second, I discuss four *prima facie* plausible (and weaker) interpretations, rejecting them as too weak; third, I argue that the quantification problem can be partially sidestepped in a discussion focused on the conceivability challenge. Indeed, as far as «everything» ranges over experiential entities (as it seems strikingly plausible), conceivability arguments threaten *IP* no matter how «everything» is exactly understood.

1.1.1 The Unrestricted Interpretation

The unrestricted interpretation claims that «everything» means absolutely everything (viz. its scope is unrestricted), so that *IP* is true if and only if absolutely everything is *NOA* basic physical entities⁹. The unrestricted interpretation is tempting. Indeed, physicalism seems an all-embracing doctrine, and the unrestricted interpretation looks apt to capture such a comprehensiveness. However, it is too strong since its *definiens* is false at an abstract-world – viz. a world at which absolutely everything is *NOA* basic physical entities except some abstract entities. Indeed, it is false that absolutely everything is *NOA* basic physical entities at an abstract-world, since abstract entities are not *NOA* basic physical entities – i.e. they are something over and above basic physical entities. Yet *IP* should be true at an abstract-world, since the existence of abstract entities

⁹ Montero in Garvey (2011, 95) and Kim (2005, 149-150).

should not suffice to falsify it¹⁰. Hence, the unrestricted interpretation is not plausible qua too strong.

1.1.2 Sciences, Causality, Concreteness and Contingency

If «everything» means absolutely everything, then its scope is excessively inclusive. Therefore, it must be narrowed somehow. There are four *prima facie* plausible ways to narrow the scope of «everything» – and, consequently, four *prima facie* plausible interpretations of *IP*:

- (a) *The Sciences Interpretation*: «everything» means every broadly scientific (viz. accountable by natural sciences) entity, so that *IP* is true if and only if every broadly scientific entity is *NOA* basic physical entities¹¹;
- (b) *The Causality Interpretation*: «everything» means every causally efficacious (viz. involved in causal relations) entity, so that *IP* is true if and only if every causally efficacious entity is *NOA* basic physical entities¹²;
- (c) *The Concreteness Interpretation*: «everything» means every concrete (viz. spatiotemporal) entity, so that *IP* is true if and only if every concrete entity is *NOA* basic physical entities¹³;
- (d) *The Contingency Interpretation*: «everything» means every metaphysically contingent (viz. neither necessary nor impossible) entity, so that *IP* is true if and only if every metaphysically contingent entity is *NOA* basic physical entities¹⁴.

¹⁰ The relation between physicalism and Platonism (i.e. the claim that there are abstract entities) is rarely discussed. The standard position is that they are compatible, since the existence of abstract entities should not suffice to falsify physicalism according to intuitions prevailing among contemporary metaphysicians – see Witmer in Barnard, Manson (2012, 101) and Crook, Gillett (2001, 337). However, some philosophers recently argued that Platonism might turn out to be incompatible with physicalism, depending on which abstract entities it exactly posits – roughly, the idea is that Platonism might rule physicalism out if abstract entities allowed by Platonism are included among those fundamental entities metaphysically constituting derivative physical ones (e.g. mountains, chairs, etc.). On this complication, see Schneider (2017) and Montero (2017).

¹¹ Wilson (2006, 61).

¹² Melnyk (2003, 10).

¹³ Strawson (2008, 19). To be precise, Strawson is characterizing materialism here, not physicalism. However, the difference between materialism and physicalism is mainly terminological, so that Strawson's considerations can be easily applied to physicalism as well. For more on the relationship between materialism and physicalism, see Stoljar (2017, §1).

¹⁴ Witmer in Barnard, Manson (2012, 101).

Each of (a)-(d) makes the scope of «everything» sufficiently exclusive to rule abstract entities out. Indeed, as usually conceived, abstract entities are unaccountable by natural sciences, causally inefficacious, non-spatiotemporal and metaphysically necessary. Therefore, (a)-(d)'s *definiens* are true at an abstract-world – e.g. (a)'s *definiens* is true at an abstract-world, since only abstract entities are not *NOA* basic physical entities at such a world, and abstract entities are not broadly scientific entities. However, (a)-(d) are not plausible qua too weak.

To begin with, (a) is too weak since its *definiens* is true at an angel-world – that is, a world at which absolutely everything is *NOA* basic physical entities except some miracle-performing angels (where a miracle-performing angel is an intentional agent endowed with miraculous forward-looking causal powers¹⁵). More precisely, that every broadly scientific entity is *NOA* basic physical entities is true at an angel-world, since only miracle-performing angels are not *NOA* basic physical entities at such a world and (arguably) miracle-performing angels are not broadly scientific entities. Yet *IP* should be false at such a world, since the existence of miracle-performing angels should suffice to falsify it. Hence, (a) is not plausible qua too weak¹⁶. Analogously, (b) is too weak since its *definiens* is true at an ectoplasm-world – that is, a world at which absolutely everything is *NOA* basic physical entities except some epiphenomenal ectoplasms (where an epiphenomenal ectoplasm is a causally inefficacious individual instantiating experiential properties). More precisely, that every causally efficacious entity is *NOA* basic physical entities is true at an ectoplasm-world, since only epiphenomenal ectoplasms are not *NOA* basic physical entities at such a world and (by definition) epiphenomenal ectoplasms are not causally efficacious. Yet *IP* should be false at such a world, since the existence of epiphenomenal ectoplasms should suffice to falsify it. Hence, (b) is not plausible qua too weak¹⁷.

Obviously, counterexamples of this kind can be handled via disjunctive interpretations – e.g. claiming that «everything» means every causally efficacious or concrete or contingent entity, so that *IP* turns out to be true if and only if every

¹⁵ In Gillett, Loewer (2001, ch. 4), Sydney Shoemaker distinguishes between forward-looking and backward-looking causal powers. The former are powers to causally produce some effects; the latter powers to be causally produced by some causes. Hence, by «miraculous forward-looking causal powers», I mean powers to causally produce some miraculous effects.

¹⁶ On miracle-performing angels, see Dowell (2006b, 40-42) and Wilson (2006, 74-77).

¹⁷ On epiphenomenal ectoplasms, see Horgan (1983, 34-35) and Lewis (1983, 362-363).

causally efficacious or concrete or contingent entity is *NOA* basic physical entities¹⁸. This interpretation is appealing, since its *definiens* is false both at an angel-world and at an ectoplasm-world – in fact, miracle-performing angels are causally efficacious, concrete and contingent, as much as epiphenomenal ectoplasms are concrete and contingent.

Still, (a)-(d) share a problem which cannot be settled via any disjunctive interpretation: they are too weak, since their *definiens* are true at a God-world – viz. a world at which absolutely everything is *NOA* basic physical entities except God (viz. a non-spatiotemporal and metaphysically necessary person¹⁹). Yet *IP* should be false at such a world, since God's existence should suffice to falsify it²⁰. Hence, neither (a)-(d) individually taken nor any disjunctive interpretation constructed out of them is plausible, since all of them are too weak. Let's examine the God case a little bit more closely before closing this subsection.

To begin with, (c) and (d)'s *definiens* are surely true at a God-world. Indeed, that every concrete entity is *NOA* basic physical entities is true at a God-world, since only God is not *NOA* basic physical entities at such a world and (by definition) God is not concrete (qua non-spatiotemporal). Moreover, that every metaphysically contingent entity is *NOA* basic physical entities is true at a God-world, since only God is not *NOA* basic physical entities at such a world and (by definition again) God is not metaphysically contingent. Second, (a)'s *definiens* is true at a God-world under some plausible assumptions. Indeed, plausibly assuming that God is not a broadly scientific entity, that every broadly scientific entity is *NOA* basic physical entities is true at a God-world, since only God is not *NOA* basic physical entities at such a world and God is not a broadly scientific entity. Third and finally, (b)'s *definiens* is also true at a God-world, even if more controversial assumptions are needed. More precisely, if God is not causally efficacious, then that every causally efficacious entity is *NOA* basic physical entities is true at a God-world, since only God is not *NOA* basic physical entities at such a world and God is not causally efficacious. Therefore, even the disjunctive interpretation according to which «everything» means every broadly

¹⁸ Elpidorou (2018, §1).

¹⁹ This is just a stipulative definition, useful in order to state counterexamples to (a)-(d). In fact, satisfactorily characterizing God is far beyond my aims. However, this definition seems legitimate here insofar as it depicts a conceptual possibility.

²⁰ Almost everyone admits that *IP* should be incompatible with God's existence. For a contrary opinion, see Snowdon in Heil (1989, 143).

scientific or causally efficacious or concrete or contingent entity (so that *IP* is true if and only if every broadly scientific or causally efficacious or concrete or contingent entity is *NOA* basic physical entities) is not plausible qua too weak (viz. its *definiens* is true at a God-world, even if *IP* should be false at such a world).

It might be replied that God is causally efficacious, so that (*b*)'s *definiens* turns out to be false at a God-world – and, consequently, a disjunctive *definiens* including causally efficacious entities into the scope of «everything» turns out to be false as well. However, this reply would be misconceived. The God-world is just a conceptual possibility, and the conceptual possibility that there is a causally inefficacious God in an almost completely physical world (viz. a world at which absolutely everything is *NOA* basic physical entities except such a God) seems hardly deniable.

1.1.3 A Plea for Experiential Physicalism

To sum up, it is very difficult to clarify «everything» in such a way to satisfy a pair of *desiderata* dear to most physicalists: make *IP* both compatible with abstract entities and incompatible with God. However, I do not further pursue the quantification problem here. In fact, my main topic is the conceivability challenge, and such a challenge threatens *IP* quite apart from exegetical niceties concerning «everything». Indeed, take the following claim:

(*EP*) Experiential Physicalism

Every experiential entity is *NOA* basic physical entities.

Now, the conceivability challenge (if successful) allows to establish that *EP* is false – in fact, anti-physicalist conceivability arguments usually aim to refute *EP*. However, *EP* is entailed by *IP* under any plausible interpretation of «everything»; therefore, the conceivability challenge (if successful) threatens *IP* under any plausible interpretation of «everything». More precisely, *IP* entails *EP* under any plausible interpretation of «everything» since there is an argument establishing *EP* from the hypothesis that *IP* is true, and this argument looks sound under any plausible interpretation of «everything». Here it is:

Sidestepping Argument 1

(P1) *IP*;

(P2) if *IP*, then *EP*;

(C) *EP*.

This argument is valid. Moreover, (P1) is true by hypothesis. Finally, it is rather uncontroversial that (P2) is true under any plausible interpretation of «everything». In fact, experiential entities are surely contingent and concrete; furthermore, they arguably are scientifically accountable (*pace* mysterianism) and causally efficacious (*pace* epiphenomenalism)²¹. Therefore, under any plausible interpretation of «everything», experiential entities are included into its scope, so that if everything is *NOA* basic physical entities (whatever «everything» exactly means), then every experiential entity is *NOA* basic physical entities. The upshot is that, however «everything» is exactly understood, (P2) is true – and, therefore, *IP* entails *EP*.

To sum up, the conceivability challenge seriously threatens *IP* quite apart from the right solution to the quantification problem, so that I can partially sidestep such a problem here. More precisely, I can sidestep such a problem insofar as «everything» in *IP* ranges over experiential entities (as it seems strikingly plausible). That said, let's move to the dependency problem.

1.2 The Dependency Problem

As previously said, the conceivability challenge focuses on *EP*. Therefore, let's rephrase the dependency problem accordingly: *EP* claims that every experiential entity is *NOA* basic physical entities in the sense that every experiential entity metaphysically depends (in some sufficiently demanding way) on basic physical entities, but what metaphysical dependency is involved here? In other words, what does «is *NOA*» exactly mean in the context of *EP*? This reformulation is apter for my purposes, since the conceivability challenge

²¹ Mysterianism and epiphenomenalism have been endorsed by notable philosophers such as Colin McGinn and Frank Jackson – see McGinn (1993, ch. 2) and Jackson (1982), respectively. However, both seem very unlikely.

concerns the metaphysical relation between experiential entities and basic physical ones. However, bear in mind that «is *NOA*» has the same meaning both in *EP* and *IP*, so that any solution to the dependency problem as just stated should qualify as a solution to the dependency problem as stated at the chapter's beginning as well.

The standard solution to the dependency problem has lengthily been the supervenience interpretation²². Roughly, it maintains that «is *NOA*» means supervenes on, so that *EP* is true if and only if every experiential entity supervenes on basic physical entities. The supervenience interpretation is appealing, since nothing-over-and-aboveness seems just (some sort of) metaphysical necessitation, and supervenience claims aptly rephrase claims of metaphysical necessitation. However, it has been strongly criticized over the last thirty years. Therefore, this section is structured as follows. First, I state the supervenience interpretation; second, I discuss its main problems, that is the weakness problem (viz. the supervenience interpretation is too weak) and the rivals' problem (viz. rival interpretations seem more adequate to rephrase «is *NOA*» and, hence, both *EP* and *IP*); third and finally, I argue that the dependency problem can be partially sidestepped in a discussion focused on the conceivability challenge. Indeed, as far as «is *NOA*» involves a certain kind of global supervenience (as it seems strikingly plausible), conceivability arguments threatens *EP* (and hence *IP*) no matter how «is *NOA*» is exactly understood.

1.2.1 The Supervenience Interpretation

The supervenience interpretation claims that «is *NOA*» means supervenes on, so that *EP* is true if and only if every experiential entity supervenes on basic physical entities.

Insofar as the dependency problem is concerned, the philosophical popularity of supervenience dates back to Donald Davidson, who resorted to this concept in order to characterize the metaphysical dependency of mental entities on physical ones. In an oft-cited passage, he wrote:

²² Here as elsewhere, I mean «standard» just in a sociological sense. Standard solutions are very widespread (among both physicalists and anti-physicalists); non-standard solutions have few supporters instead.

mental characteristics are in some sense dependent, or supervenient, on physical characteristics. Such supervenience might be taken to mean that there cannot be two events alike in all physical respects but differing in some mental respect, or that an object cannot alter in some mental respect without altering in some physical respect.²³

As this passage suggests, supervenience is a (binary, reflexive, non-symmetric and transitive) relation of necessary covariation between sets of properties – the supervening set (*A*) and the base set (*B*). In a slogan, *A*-properties supervene on *B*-properties if and only if there cannot be any *A*-difference (viz. any variation in *A*-properties) without a *B*-difference (viz. without a variation in *B*-properties). Hence, according to the supervenience interpretation, *EP* is true if and only if there cannot be any experiential difference (viz. any variation in experiential properties) without a basic physical difference (viz. without a variation in basic physical properties)²⁴.

Unfortunately, this slogan can be cashed out in many ways, depending on how the covariation relation and its modal force are exactly characterized. Hence, as David Lewis rightly complained, there has been an «unlovely proliferation of non-equivalent definitions [of supervenience]», with the undesirable result that such a «useful notion threatens to fade away into confusion»²⁵. For the sake of clarity, here I focus just on Frank Jackson's minimal physical duplicate thesis – viz. the most appealing supervenience thesis in relation to the dependency problem. It can be stated as follows:

(MPD) Minimal Physical Duplicate Thesis

For any metaphysically possible world *w*, if *w* is a minimal basic physical duplicate of the actual world, then it is an experiential duplicate of the actual world.²⁶

²³ Davidson in Foster, Swanson (1970, 214).

²⁴ For useful overviews on supervenience, see Steinberg in Hoeltje, Schnieder and Steinberg (2013, 123-166) and McLaughlin, Bennett (2018). On supervenience solutions to the dependency problem, see Elpidorou (2018, §3), Stoljar (2017, §§3-5) and Tiehen (2018, §1.1).

²⁵ Lewis (1986, 14).

²⁶ The *locus classicus* is Jackson (1998, 12), even if the label «minimal physical duplicate thesis» comes from Witmer (2006, 187). Note that Jackson's version is slightly different from mine. In its antecedent, it speaks of «physical duplicate of the actual world [i.e. indiscernible from the actual world in any physical respect]», instead of «basic physical duplicate of the actual world [i.e. indiscernible from the actual world in any basic physical respect]»; in its consequent, it speaks of «duplicate *simpliciter* of the actual world [i.e. indiscernible from the actual world in any

Now I can state the supervenience interpretation more accurately: it claims that «is *NOA*» means supervenes on, with supervenience stated via the notions of minimal basic physical duplicate and experiential duplicate (of the actual world). Hence, according to this interpretation, *EP* is true if and only if *MPD*. However, before proceeding, some clarifications are in order.

First, the notion of metaphysical possibility is usually taken to be primitive²⁷. Still it can be roughly characterized as compatibility with ways things actually are, that is compatibility with the actual natures of things. Hence, metaphysically possible worlds can be roughly characterized as complete situations which are compatible with the actual natures of things. Furthermore, metaphysical possibility is usually taken to be intermediate between conceptual and nomological possibility – in particular, it is usually taken to be stronger than conceptual possibility and weaker than nomological possibility. In other words, any metaphysically possible world is usually taken to be conceptually possible but not vice versa, and any nomologically possible world is usually taken to be metaphysically possible but not vice versa.

Second, experiential properties are just phenomenal ones – that is, properties such that there is something it is like to instantiate them²⁸. More generally, I use «experiential» and derivative locutions just as terminological variants for «phenomenally conscious» and derivative locutions²⁹.

Third, w is an X -duplicate of w' if and only if it is X -indiscernible from w' – viz. it has the same world-wide pattern of distribution of X -properties of w' . In particular, w is a basic physical duplicate of w' if and only if it has the same world-wide pattern of distribution of basic physical properties of w' ; analogously, w is an experiential duplicate of w' if and only if it has the same world-wide pattern of distribution of experiential properties of w' . Having the same world-wide pattern of distribution of X -properties is a (binary, reflexive, symmetric and

qualitative respect]», instead of «experiential duplicate of the actual world [i.e. indiscernible from the actual world in any experiential respect]». The first difference is merely terminological; the second is more substantive (hinging on the fact that Jackson's version of *MPD* aims to rephrase *IP*, whereas mine aims to rephrase *EP*).

²⁷ Gendler, Hawthorne (2002, 4).

²⁸ The *locus classicus* of this characterization is Nagel (1974).

²⁹ Phenomenal consciousness is characterized by the instantiation of phenomenal properties. It must be distinguished from other kinds of consciousness – e.g. access consciousness, self-consciousness, etc.; on these distinctions, see Block (2007, ch. 2).

transitive) relation between possible worlds – and, admittedly, an unclear one. However, for the sake of simplicity, I am happy with an intuitive understanding of it here³⁰.

Fourth, w is a minimal X -duplicate of w' if and only if it is an X -duplicate of w' and does not contain anything else than what it must in order to be such an X -duplicate. In particular, w is a minimal basic physical duplicate of w' if and only if it is a basic physical duplicate of w' and does not contain anything else than what it must in order to be such a basic physical duplicate³¹.

Fifth, *MPD* is a global supervenience thesis having metaphysical force. It is global since it states a covariation between global patterns (viz. world-wide patterns) of properties. It has metaphysical force since possible worlds relevant to its truth-value are all and only metaphysically possible worlds.

Qua global, *MPD* must be distinguished from individual supervenience theses – viz. supervenience theses stating covariations in supervenient and base properties between individuals³². It has been argued that global supervenience is

³⁰ Such a relation is usually spelt out via the notion of X -preserving isomorphism (« X -isomorphism» for short) between possible worlds. The idea is that, for any worlds w and w' , w is X -indiscernible from w' if and only if there is an X -isomorphism between them, that is a bijection f from inhabitants of w to inhabitants of w' such that, for any X -property F and any x in w , x is F in w if and only if $f(x)$ is F in w' . Rephrasing global supervenience theses accordingly allows to distinguish between (at least) three non-equivalent formulations of them: strong, intermediate and weak global supervenience – for more on this point, see Bennett (2004). However, as far as the conceivability challenge is concerned, such distinctions can be overlooked.

³¹ Witmer (1999, 326) suggests a strategy to rigorously define «minimal basic physical duplicate». To begin with, he suggests that w is a minimal basic physical duplicate of w' if and only if (i) w is a basic physical duplicate of w' and (ii) for any w'' , if w'' is a basic physical duplicate of w , then it is a duplicate *simpliciter* of w . Then he considers some counterexamples, refining his definition accordingly. That said, Witmer's analysis is questionable, as shown in Shrader (2008, 263-270). Thus I preferred to overlook it in the main text, being happy with an intuitive understanding of the notion of minimal basic physical duplicate.

³² Two clarifications. First, individual supervenience has two versions: weak and strong. In particular, A -properties weakly individually supervene on B -properties if and only if, for any world w and any individuals x and y in w , if x and y are B -indiscernible in w , then they are A -indiscernible in w ; A -properties strongly individually supervene on B -properties if and only if, for any worlds w and w' and any individuals x in w and y in w' , if x in w is B -indiscernible from y in w' , then x in w is A -indiscernible from y in w' . I have in mind just strong individual supervenience in the main text. Indeed, weak individual supervenience cannot capture the dependency involved in *EP*, allowing for so-called inter-worlds variations (viz. individuals occurring at distinct possible worlds which are indiscernible in base properties but discernible in supervening ones), whereas *EP* should disallow them (if experiential entities are *NOA* basic physical entities and, in particular, experiential properties are *NOA* basic physical properties, then any possible individuals indiscernible in basic physical properties should be indiscernible in experiential ones too, independently from the fact that such individuals belong to the same possible world or not). Second, I did not mention regional supervenience – see Horgan (1982, 34-41). Indeed, as argued in McLaughlin, Bennett (2018, §4.2), regional supervenience can be considered just as a variety of individual supervenience – in particular, that variety such that covarying individuals are spatiotemporal regions.

preferable in order to rephrase *EP*, since it better handles metaphysical dependencies involving relations and extrinsic properties (and, maybe, «every experiential entity» in *EP* ranges over relations or extrinsic properties). However, this is doubtful, since even individual supervenience theses can handle such dependencies, as long as relations and extrinsic properties are included into the supervenience base. At the end of the day, the main advantage of global supervenience is not technical, residing in its theoretical virtues instead: indeed, global supervenience theses are simpler, more intuitive and manageable than individual ones³³.

Qua metaphysical, *MPD* must be distinguished from non-metaphysical supervenience theses – viz. supervenience theses such that it is not the case that possible worlds relevant to their truth-value are all and only metaphysically possible worlds. More precisely, non-metaphysical supervenience theses are such that either not all metaphysically possible worlds are relevant to their truth-value (e.g. nomological supervenience theses) or not only metaphysically possible worlds are relevant to their truth-value (e.g. conceptual supervenience theses). Metaphysical supervenience is well-equipped to capture the metaphysical dependency involved in *EP*, since the key idea behind such a dependency seems that there is some sort of metaphysical necessitation of the experiential nature of the actual world by its basic physical nature, and relations of metaphysical necessitation are arguably best captured by supervenience theses with metaphysical force. Moreover, alternatives seem incapable to adequately represent debaters' positions. Indeed, we need a supervenience thesis accepted by physicalists and rejected by anti-physicalists; however, several physicalists reject conceptual supervenience as much as several anti-physicalists accept nomological supervenience (of experiential properties on basic physical ones)³⁴. Therefore, I focus on metaphysical supervenience.

Sixth and finally, in order to evaluate the supervenience interpretation, I need a version of its *definiens* stated not just in relation to the actual world, but for any

³³ For a similar position, see Bennett (2004, 508). On global supervenience, see Steinberg (2014).

³⁴ Type-B physicalists (that is, the majority of them) reject conceptual supervenience of experiential properties on basic physical ones – on type-B physicalism and its orthodox status, see the incipit of §2.1. On the other hand, well-known dualists such as David Chalmers accept nomological supervenience.

possible world – that is, a version of *MPD* which is relativized to possible worlds. Here it is:

(MPD_{w}) Minimal Physical Duplicate Thesis at w**

For any metaphysically possible world w , if w is a minimal basic physical duplicate of w^* , then it is an experiential duplicate of w^* .³⁵

Now let's move to the main problems of the supervenience interpretation: the weakness problem and the rivals' problem.

1.2.2 The Weakness Problem

The weakness problem is that the supervenience interpretation is too weak – viz. for some possible world w^* , *MPD_{w*}* is true even if *EP* should be false at w^* .

The weakness problem has several versions. Indeed, the great majority of criticisms against the supervenience interpretation focuses on its weakness. Here I sketch the most influential ones: the blockers problem and the emergentism problem. Let's briefly survey them.

(a) The Blockers Problem

Blockers are non-physical extras – namely, metaphysically possible but non-actual entities which are not *NOA* basic physical ones. Extras come in two varieties: possessors and blockers. Possessors are simply experiential extras – that is, possible but non-actual individuals which are something over and above basic physical entities and instantiate experiential properties. We already met them: epiphenomenal ectoplasms are just causally inefficacious possessors. Blockers are trickier to define. Roughly, they are extras which prevent certain basic physical entities giving rise to experiential ones, even if such basic physical entities would give rise to experiential ones in the absence of blockers³⁶. In order to state the blockers problem, let's introduce the notion of metaphysical necessitation. More precisely, let's say that basic physical entities occurring at w^* metaphysically necessitate experiential entities occurring at w^* if and only if, for any metaphysically possible world w , if w is a basic physical duplicate of w^* ,

³⁵ Stoljar (2017, §4.3).

³⁶ This characterization is clearly circular. However, it is not a definition, so no threat from circularity.

then it is an experiential duplicate of w^* ³⁷. That said, the blockers problem can be stated as follows.

To begin with, let w^* be a world at which there are no blockers, there are both basic physical entities and experiential ones, and the former metaphysically necessitate the latter as long as blockers are absent. In other words, for any metaphysically possible world w , if w is a basic physical duplicate of w^* and it does not contain any blocker, then it is an experiential duplicate of w^* – even if, for some metaphysically possible world w' (containing blockers), w' is a basic physical duplicate of w^* but not an experiential duplicate of it (since, because of blockers, no experiential property is instantiated at w'). Now, it seems that MPD_{w^*} is true. Indeed, let w be a minimal basic physical duplicate of w^* . By hypothesis, w is a basic physical duplicate of w^* ; furthermore, qua minimal, it does not contain any blocker. However, by hypothesis again, any basic physical duplicate of w^* not containing any blocker is an experiential duplicate of w^* . Hence, w is an experiential duplicate of w^* . It follows that, for any metaphysically possible world w , if w is a minimal basic physical duplicate of w^* , then it is an experiential duplicate of w^* – i.e. it follows that MPD_{w^*} is true. Yet EP should be false at w^* , since to be *NOA* basic physical entities should imply to be metaphysically necessitated by them without any further qualification, and this is not the case here. In other words, that EP is true at w^* should imply that, for any metaphysically possible world w , if w is a basic physical duplicate of w^* , then it is an experiential duplicate of w^* no matter which further entities (e.g. blockers) w eventually contains; still, this is not the case here, since there is a metaphysically possible world w' (containing blockers) such that w' is a basic physical duplicate of w^* but not an experiential duplicate of it³⁸. Therefore, the supervenience interpretation is not plausible qua too weak.

(b) The Emergentism Problem

Experiential emergentism (*EE* for short) claims that experiential entities emerge from basic physical ones. Emergence-talk is clearly metaphorical. To sharpen ideas, let's say that, according to *EE*, it is not the case that experiential

³⁷ This is just a stipulative definition, useful in order to state the blockers problem and nothing more. In fact, satisfactorily characterizing metaphysical necessitation is far beyond my aims.

³⁸ On supervenience, physicalism and extras (especially blockers), see Witmer (1999), Hawthorne (2002) and Leuenberger in Zimmerman (2008, ch. 7).

entities are *NOA* basic physical entities, even if the former bear a very tight metaphysical relation to the latter. More precisely, such a relation is so tight that experiential properties supervene on basic physical properties. Hence, *EE* conjoins the negation of *EP* with the claim that every experiential property supervenes on basic physical properties.

EE comes in two varieties, depending on the modal force attached to supervenience: standard *EE* (*SEE* for short) and Moorean *EE* (*MEE* for short). *SEE* conjoins the negation of *EP* with the claim that every experiential property supervenes on basic physical properties just with nomological force; *MEE* conjoins the negation of *EP* with the claim that every experiential property supervenes on basic physical properties with metaphysical force instead. Thus, stating supervenience *à la* Jackson, *MEE* conjoins the negation of *EP* with *MPD*. Clearly, if *MEE* is possible, then the supervenience interpretation is too weak. Indeed, suppose that *MEE* is possible. Then, for some possible world w^* , MPD_{w^*} is true even if *EP* should be false at w^* – that is, the supervenience interpretation is too weak³⁹.

Now, it might be doubted that *MEE* is actually possible, since it might be argued that such a doctrine involves some subtle conceptual incoherences. However, there are coherent ways to spell it out as far as I can see. For instance, take the doctrine constituted by the following claims: (i) experiential dualism (viz. experiential entities are not *NOA* basic physical ones), (ii) realism about fundamental psychophysical laws (viz. there are fundamental natural laws connecting basic physical properties and experiential ones), and (iii) metaphysical necessitarianism about fundamental laws (viz. fundamental laws are metaphysically necessary). This view does not seem to hide any conceptual incoherence – viz. it seems possible in the relevant sense (that is, conceptually possible). Moreover, it is an instance of *MEE*. It follows that *MEE* is conceptually possible – and, consequently, the supervenience interpretation is not plausible qua too weak.

³⁹ For the claim that supervenience physicalism is too weak qua compatible with (certain varieties of dualistic) emergentism, see Horgan (1993) and Wilson (2005).

1.2.3 The Rivals' Problem

The supervenience interpretation has four major rivals: the reducibility interpretation, the a priori entailment interpretation, the grounding interpretation and the realization interpretation. Let's briefly sketch them⁴⁰.

(a) *The Reducibility Interpretation*: «is *NOA*» means is reducible to. Reducibility is a multi-faceted notion. In this context, it is mainly understood as a definability relation between terms. Hence, according to the reducibility interpretation, *EP* is true if and only if every experiential term («pain», «red visual sensation», etc.) is definable by basic physical terms («electron», «mass», etc.) plus topic-neutral terms («cause», «or», etc.). Thus, according to this interpretation, every experiential sentence (viz. every sentence involving experiential terms) can be paraphrased via basic physical sentences (viz. via sentences involving just basic physical plus topic-neutral terms)⁴¹;

(b) *The A Priori Entailment Interpretation*: «is *NOA*» means is a priori entailed by. A priori entailment is a relation between sentences. More precisely, *A* entails *B* if and only if the material conditional $A \supset B$ is metaphysically necessary; furthermore, *A* a priori entails *B* if and only if

⁴⁰ For similar lists of rivals, see Elpidorou (2018, §§3-7) and Tiehen (2018, §2).

⁴¹ Although the reducibility interpretation has been historically influential, few philosophers defend it nowadays. Its *locus classicus* is probably Jackson (1998, ch. 2-3). That said, three clarifications are in order. First, topic-neutral terms are terms such that their use carries no metaphysical commitment – i.e. *t* is a topic-neutral term if and only if its use does not involve any commitment apropos the nature of what *t* is about. As famously suggested by Gilbert Ryle, «[w]e may call English expressions "topic-neutral" if a foreigner who understood them, but only them, could get no clue at all from an English paragraph containing them what that paragraph was about», Ryle (1954, 116). Second, although no experiential term has been plausibly defined using only basic physical plus topic-neutral terms, there is a powerful technique (inspired by Frank Ramsey) via which it seems possible to define experiential (and other mental) terms using only this austere vocabulary – on such a technique, see Lewis (1970), Lewis (1972) and Block (2007, ch. 2). I will extensively deal with this technique in §2.2, even if I will resort to it just in order to cash out the cognitive content of propositions constituting physical theories (not in order to find plausible definitions of mental terms). Third and finally, reducibility has been often understood as identity in philosophy of mind. So, why not consider a reducibility interpretation based on identity (something like «is *NOA*» means is identical to)? The reason is that almost no physicalist claims that experiential entities are identical to basic physical ones, so that almost no physicalist understands «is *NOA*» as is identical to. Physicalists usually claim that experiential entities are identical to higher-order (e.g. neurological) ones (that is, they are identical to derivative physical entities). However, this is irrelevant in relation to the dependency problem, since this problem does not concern the relation between physicalistically problematic (e.g. experiential) entities and derivative physical ones, but that between derivative physical entities and basic ones.

A entails B and the material conditional $A \supset B$ is a priori knowable. Hence, according to the a priori entailment interpretation, EP is true if and only if every experiential truth (viz. every true sentence involving experiential terms) is a priori entailed by some basic physical truths (viz. by some true sentences involving just basic physical plus topic-neutral terms)⁴²;

(c) *The Grounding Interpretation*: «is *NOA*» means is metaphysically grounded in. Metaphysical grounding is an in-virtue-of relation between facts. More precisely, the fact that p is metaphysically grounded in some set of facts Γ if and only if p obtains in virtue of Γ 's obtaining. Hence, according to the grounding interpretation, EP is true if and only if every experiential fact is metaphysically grounded in some set of basic physical facts⁴³. Metaphysical grounding is both a primitive and a technical notion. Therefore, it cannot be defined even if it cries out for clarification. It is usually clarified via examples. For instance, dispositional features are often taken to be metaphysically grounded in categorical ones – e.g. the fact that a glass is fragile is often taken to be metaphysically grounded in the fact that it has a certain molecular structure⁴⁴;

(d) *The Realization Interpretation*: «is *NOA*» means is realized by. Hence, EP is true if and only if every experiential entity is realized by some basic physical entity. Realization is an elusive notion too. In this context, it has two main versions: a causal powers version and a functional role version. Thus two realization interpretations are available: the causal power interpretation and the functional role interpretation. According to former, realization is a relation between properties. More precisely, a basic physical property P realizes an experiential property E if and only if E 's set of causal powers is a sub-set of P 's set of causal powers⁴⁵. Hence, EP is true if and only if every experiential property is realized by some basic physical property. According to the latter, realization is a relation between state tokens («tokens» for short). More precisely, a basic physical token p realizes a higher-order (e.g. experiential) token e if and only if (i) e is a

⁴² Chalmers, Jackson (2001, 315-328).

⁴³ Dasgupta (2014, 557-559) and Bliss, Trogon (2016, §6.1).

⁴⁴ I will return on the dispositional-categorical distinction in §3.1.3.

⁴⁵ Shoemaker in Crook, Gillett (2001, ch. 4) and Wilson (2011).

token of an experiential type E such that for a token of E to exist just is for there to exist a token of some (lower-order) type such that tokens of that (lower-order) type play the functional role R_E , the role distinctive of E ; (ii) p is a token of a basic physical type P such that, necessarily, given the physical laws and physical circumstances C , tokens of P play R_M ; (iii) the laws of physics hold and physical circumstances C obtain; (iv) the token of the experiential type E whose existence is entailed by (i)-(iii) is identical to e ⁴⁶. Hence, EP is true if and only if every experiential token is realized by some basic physical token.

Now, let's briefly evaluate (a)-(d). (a)-(b) are surely inadequate, for at least two reasons. First, take non-reductive experiential physicalism and a posteriori experiential physicalism. The former claims that EP is true even if some experiential terms are not definable by basic physical plus topic-neutral terms. The latter claims that EP is true even if some experiential truths are not a priori entailed by basic physical truths. Maybe such views are false, but not false by definition. Their truth-value is a substantive philosophical issue, not a definitional matter. However, if (a) or (b) are endorsed, non-reductive experiential physicalism and a posteriori experiential physicalism can be ruled out just by definition – e.g. if EP means that every experiential term is definable by basic physical plus topic-neutral terms, then non-reductive experiential physicalism (viz. the conjunction of EP with the claim that some experiential terms are not definable by basic physical plus topic-neutral terms) is false by definition. Second, EP (as much as IP) is a metaphysical claim. More precisely, it is a claim about the fundamental nature of experiential entities, not about epistemic matters such as definability relations between terms (and sentences) or a priori entailment relations between truths. Hence, it seems wrong to paraphrase it via epistemic notions such as definability or a priori entailment: EP (as much as IP) has arguably epistemic consequences, but it is not an epistemic thesis and it should not be defined via epistemic notions⁴⁷.

⁴⁶ Melnyk (2003, ch. 1) and Melnyk (2018, §1). To be exact, (i)-(iv) define physical realization, a kind of realization which is distinguishable from realization *simpliciter*. However, in this context, just physical realization is relevant, so I overlooked this distinction in the main text.

⁴⁷ As Howell (2009, 319) nicely puts it, «if physicalism is a metaphysical thesis, it must be free of epistemic elements».

(c)-(d) are more promising instead. Indeed, they define metaphysical dependency in non-epistemic terms. Moreover, their *definiencia* might be true at the same possible worlds at which *EP* should be true. Therefore, all things considered, they seem preferable to the supervenience interpretation (whose *definiens* is surely true at worlds at which *EP* should be false). However, I will not analyze them in detail here. Indeed, as I am going to argue in the next subsection, the conceivability challenge can be stated at its best being happy with the supervenience interpretation instead.

1.2.4 A Plea for Supervenience Physicalism

I grant that the supervenience interpretation is too weak. I also grant that some rival interpretations (viz. (c) or (d)) might not share this flaw. Hence I grant that, all things considered, some rival interpretation might be preferable to the supervenience interpretation. However, I will not further pursue the dependency problem here. In fact, my main topic is the conceivability challenge, and such a challenge threatens *EP* (and, hence, *IP*) quite apart from exegetical niceties concerning «is *NOA*». Indeed, the conceivability challenge (if successful) allows to establish that *MPD* is false. However, *MPD* is entailed by *EP* under any plausible interpretation of «is *NOA*»; therefore, the conceivability challenge (if successful) threatens *EP* under any plausible interpretation of «is *NOA*».

More precisely, *EP* entails *MPD* under any plausible interpretation of «is *NOA*» since there is an argument establishing *MPD* from the hypothesis that *EP* is true, and this argument looks sound under any plausible interpretation of «is *NOA*». Here it is:

Sidestepping Argument 2

(P1) *EP*;

(P2) if *EP*, then *MPD*;

(C) *MPD*.

This argument is valid. Furthermore, (P1) is true by hypothesis. Finally, it is rather uncontroversial that (P2) is true under any plausible interpretation of «is *NOA*». In fact, suppose that *MPD* is false. Then, things could have been experientially different without being basically physically different. It follows

that the global basic physical nature of the actual world does not completely fix its global experiential nature. Yet *EP* should at least involve that the global basic physical nature of the actual world completely fixes its experiential nature, however «is *NOA*» is exactly understood. Therefore, *EP* is false. To sum up, however «is *NOA*» is exactly understood, if *MPD* is false, then *EP* is false – so that, by contraposition, if *EP* is true, then *MPD* is true. The upshot is that, however «is *NOA*» is exactly understood, (*P2*) is true – and, therefore, *EP* entails *MPD*⁴⁸.

To sum up, the conceivability challenge seriously threatens *EP* quite apart from the right solution to the dependency problem, so that I can partially sidestep such a problem here. More precisely, I can sidestep such a problem insofar as «is *NOA*» in *EP* involves supervenience stated *à la* Jackson (as it seems strikingly plausible).

Before moving to the last part of the interpretation problem (viz. the physicality problem), it might be useful to recap the main results achieved so far. Indeed, taking them into account, it turns out that a straightforward anti-physicalist argument becomes readily available. This argument pops out just combining the negation of *MPD* (that is, what conceivability arguments aim to establish) with the second premises of the aforementioned sidestepping arguments. Here it is:

(APA) Anti-Physicalist Argument

(P1) it is not the case that *MPD*;

(P2) if *EP*, then *MPD*;

(C1) it is not the case that *EP*;

(P3) if *IP*, then *EP*;

(C) it is not the case that *IP*.

⁴⁸ As observed by Christopher Brown, «nearly all versions of physicalism assume something like Jackson's... physical supervenience thesis», Brown (2017, 4). However, although the idea that *MPD* is necessary for *EP* (and that an adapted version of *MPD* is necessary for *IP*) is widespread, it is not utterly uncontroversial. In fact, some philosophers recently argued that even very weak modal conditions such as *MPD* are not actually necessary for *EP* (as much as adapted versions of *MPD* are not actually necessary for *IP*) – see Montero (2013) and Montero, Brown (2017) on this point.

APA is valid. Furthermore, quite apart from the right interpretations of «everything» and «is *NOA*», (*P2*) and (*P3*) are true (as previously argued). Therefore, refuting *IP* simply requires establishing (*P1*), that is exactly what conceivability arguments aim to do. In other words, conceivability arguments seriously threaten *IP* quite apart from the right solutions to both the quantification and the dependency problem, so that I can partially sidestep such problems here. More precisely, I can sidestep the quantification problem insofar as «everything» ranges over experiential entities, and I can sidestep the dependency problem insofar as «is *NOA*» involves supervenience stated *à la* Jackson. That said, let's move to the last part of the interpretation problem: the physicality problem.

1.3 The Physicality Problem

IP claims that everything is *NOA* basic physical entities in the sense that everything is *NOA* entities having a certain character, but what character is involved here? In other words, what does «basic physical entities» exactly mean in the context of *IP*?

The standard solution to the physicality problem is the so-called theory interpretation, according to which «basic physical entities» means entities posited by fundamental physics⁴⁹. The theory interpretation is appealing, since it defers to physics in such a way to take what seems to be the main rationale behind physicalism (namely, the idea that physics enjoys some sort of ontological primacy⁵⁰) as seriously as possible. Indeed, the theory interpretation suggests to define «basic physical entities» in terms of physics itself: «basic physical entities» means entities posited by physics, so that *IP* is true if and only if everything is *NOA* entities posited by physics. What better way to vindicate physics' alleged ontological primacy? In this section, I mainly deal with the theory interpretation. More precisely, the section is structured as follows. I start by introducing the theory interpretation and its main drawback – viz. Hempel's

⁴⁹ «Physicalists... widely agree that... [basic] physical entities should be characterized by reference to fundamental physics», Wilson (2006, 61).

⁵⁰ On this alleged primacy, see Melnyk (2003, 2) and Ney (2008a, 5). That said, it is doubtful that such a primacy is the main rationale behind physicalism. Indeed, I tend to agree with David Papineau on the idea that the main rationale behind physicalism is the so-called causal closure argument, not some kind of ill-defined ontological privilege enjoyed by physics – on the causal closure argument, see §3.1.2.

dilemma; I go on stating two main versions of the theory interpretation (corresponding to two ways to tackle Hempel's dilemma) and evaluating them; finally, I sketch an alternative interpretation (viz. the negative interpretation) and argue that it is quite valuable (even if in the minority) in a discussion focused on conceivability arguments. I conclude that, for my purposes, it is preferable to remain agnostic on the choice between these interpretations. That said, a couple of preliminaries are needed before delving into details.

First, I focused on experiential and supervenience physicalism so far, so that it might seem that I should rephrase the physicality problem accordingly – that is, I should state the physicality problem more or less as follows: what does «basic physical entities» exactly mean in the context of *EP* (or *MPD*)⁵¹? However, the physicality problem is more easily worked with in the context of *IP*. Therefore, for the sake of simplicity, I prefer something like the opening formulation of the problem here: what does «basic physical entities» exactly mean in the context of *IP*? As far as I can see, nothing substantive hinges on this. Second, there is an issue deserving to be briefly mentioned (even just to consciously set it aside), given that it will be ignored hereinafter. Let's distinguish between a priori and a posteriori interpretations of «basic physical entities». A priori interpretations cash out the meaning of «basic physical entities» without any reference to empirical matters (viz. matters such that empirical evidence is needed to settle them); a posteriori interpretations cash it out by referring to empirical matters instead. Nowadays, a posteriori interpretations are dominant. In fact, the theory interpretation is largely prevalent and it is clearly a posteriori – since it claims that «basic physical entities» means entities posited by fundamental physics, and which entities fundamental physics turns out to posit is an empirical matter. Just one a priori interpretation has a significant amount of supporters: the negative interpretation, according to which «basic physical entities» means fundamental non-mental entities. This interpretation seems somewhat *ad hoc*. However, it is quite appealing in this context, as I am going to show at the end of this section. That said, let's start by introducing the theory interpretation and its main drawback (viz. Hempel's dilemma).

⁵¹ «Basic physical entities» does not explicitly occur in *MPD*, so that it might sound strange to ask what does it mean in such a context. However, bear in mind that «basic physical duplicate» (which occurs in *MPD* instead) is defined in terms of basic physical properties, which are basic physical entities in turn. So nothing strange after all.

1.3.1 Theory Interpretations and Hempel's Dilemma

As just said, the theory interpretation is the standard solution to the physicality problem. It claims that «basic physical entities» means entities posited by fundamental physics («physics» for short), so that *IP* is true if and only if everything is *NOA* entities posited by physics. The theory interpretation is mainly threatened by Hempel's dilemma, a dilemma devised by Carl Gustav Hempel in the late Sixties. As rephrased by Geoffrey Hellman, the dilemma is that

either physicalist principles are based on current physics, in which case there is every reason to think that they are false; or else they are not, in which case it is, at best, difficult to interpret them, since they are based on a “physics” that does not exist – yet we lack any general criterion of “physical object, property or law” framed independently of existing physical theory.⁵²

In other words, the problem is that, if «basic physical entities» means entities posited by physics, either such a physics is current physics («*C*-physics» for short) or it is future, ideal physics («*F*-physics» for short). Hence, two theory interpretations come out: one according to which *IP* is true if and only if everything is *NOA* entities posited by *C*-physics, and the other according to which *IP* is true if and only if everything is *NOA* entities posited by *F*-physics. Now, let's call the former interpretation «current-theory interpretation» and its *definiens* «*C*-physicalism»; furthermore, let's call the latter interpretation «future-theory interpretation» and its *definiens* «*F*-physicalism». Hempel's dilemma aims to establish that both versions of the theory interpretation are inadequate. More precisely, the current-theory interpretation is inadequate since *C*-physicalism seems clearly false, whereas *IP* should not; and the future-theory interpretation is inadequate since *F*-physicalism seems trivial, vacuous and compatible with plain anti-physicalist views, whereas *IP* should not. Let's examine both versions of the theory interpretation in detail.

⁵² Hellman (1985, 609). For Hempel's original formulation, see Hempel (1980, 194-195).

1.3.2 The Current-Theory Interpretation

The current-theory interpretation claims that «basic physical entities» means entities posited by *C*-physics, so that *IP* is true if and only if *C*-physicalism is true. This interpretation is unpalatable since its *definiens* (viz. *C*-physicalism) seems clearly false, whereas *IP* should not (maybe *IP* is false, but not clearly false). Indeed, quite independently from the metaphysical status of experiential entities, it is rather uncontroversial that *C*-physics is ontologically incomplete – in other words, quite independently from the metaphysical status of experiential entities, it is rather uncontroversial that there are entities (e.g. currently ignored fundamental micro-particles) which are something over and above entities posited by *C*-physics. Hence, it is rather uncontroversial that not everything is *NOA* entities posited by *C*-physics – viz. *C*-physicalism is clearly false. This problem seemed insurmountable to most physicalists, pushing them toward the future-theory interpretation. However, some philosophers recently tried to overcome it. There are four main strategies to do so: the falsity strategy, the local strategy, the minimal strategy and the attitudinal strategy. Let's briefly sketch them.

The falsity strategy claims that, even if *C*-physicalism is clearly false, we can be happy with it insofar as it is more probable than its relevant rivals (e.g. dualism) – where an hypothesis *H1* is a relevant rival of *H2* if and only if it is sensibly intended to achieve a significant number of *H2*'s theoretical goals, it has actually been formulated, and is such that *H1* and *H2* fail to entail each other (that is, it is metaphysically possible that *H1* is true and *H2* false, as well as that *H2* is true and *H1* false)⁵³. Roughly, the idea is that *C*-physicalism is just a scientific hypothesis, and we can be happy with a scientific hypothesis (despite its clear falsity) insofar as it is more probable than its relevant rivals⁵⁴. The local strategy claims that, even if *C*-physicalism is clearly false, maybe some local versions of it are not and we can be happy with them – where such local versions are obtained from *C*-physicalism altering the scope of «everything» in such a way to focus just on certain phenomena. For instance, even if it is clearly false that everything is

⁵³ To be precise, according to Andrew Melnyk (the main supporter of the falsity strategy), *H1* and *H2* are relevant alternatives only if they fail to supervene on each other. However, given that I previously characterized supervenience as a relation between sets of properties (and not between hypotheses), I preferred to rephrase this condition in terms of entailment.

⁵⁴ Melnyk (1997).

NOA entities posited by *C*-physics, maybe it is not clearly false that every experiential entity is *NOA* entities posited by *C*-physics⁵⁵. The minimal strategy claims that, even if *C*-physicalism is clearly false, maybe some minimal versions of it are not and we can be happy with them – where such minimal version are obtained from *C*-physicalism altering the extension of «entities posited by *C*-physics» in such a way to single out just a minimal set of such entities. For instance, even if it is clearly false that everything is *NOA* entities posited by *C*-physics, maybe it is not clearly false that everything is *NOA* such-and-such entities posited by *C*-physics (e.g. entities constituting energetic, dynamic and electric interactions between bodies, governed by respective conservation laws) plus whatever entity adequately resembling them (e.g. whatever entity constituting other types of interactions between bodies governed by respective conservation laws)⁵⁶. Finally, the attitudinal strategy claims that *C*-physicalism should not be conceived as a truth-evaluable claim, so that it cannot be clearly false at all. It should be conceived as an ontological attitude instead – viz. the attitude to form your ontological commitments in line with *C*-physics⁵⁷.

As far as I can see, the falsity strategy, the local strategy and the attitudinal strategy are decidedly unpromising. Indeed, such strategies threaten convincing assumptions which are usually presupposed in the debate. In particular, the falsity strategy threatens the assumption that physicalism is a plausible claim, conceiving it as clearly false instead; the attitudinal strategy threatens the assumption that physicalism is a truth-evaluable claim, conceiving it as an ontological attitude instead; finally, the local strategy threatens the assumption that physicalism is a very general claim, conceiving it as concerning just a very restricted class of entities (e.g. experiential ones) instead. The minimal strategy is more appealing. However, it is far from clear how it should be exactly spelt out, since it is far from clear how entities adequately resembling those posited by *C*-physics should be exactly characterized. It follows that, all things considered, the current-theory interpretation is far from satisfying. Consequently, let's move to the more plausible future-theory interpretation.

⁵⁵ Smart (1978).

⁵⁶ Vicente (2011).

⁵⁷ Ney (2008b).

1.3.3 The Future-Theory Interpretation

The future-theory interpretation is the standard version of the theory interpretation⁵⁸. It claims that «basic physical entities» means entities posited by *F*-physics, so that *IP* is true if and only if *F*-physicalism is true. Despite its initial appeal, this interpretation has its own problems, since its *definiens* (viz. *F*-physicalism) seems trivial, vacuous and compatible with plain anti-physicalist views, whereas *IP* should be substantive, contentful and incompatible with plain anti-physicalist views. However, I believe that such problems can be overcome. Let's examine them in turn.

First, *F*-physicalism seems trivial (i.e. it can be established come what may), whereas *IP* should be substantive (that is, it should be not possible to establish it come what may). Here the problem is that, if *F*-physics is something like a fully explanatory, comprehensive theory, then it seems trivially true that everything is *NOA* entities posited by it, «since... physics [so conceived] will of course expand as much as it has to in order to explain all phenomena»⁵⁹. In other words, if *F*-physics is something like a fully explanatory, comprehensive theory, then whatever does not seem *NOA* its posits could be simply added to such posits, reestablishing *F*-physicalism again. For instance, let's suppose that there are immortal souls. Intuitively, they are not *NOA* basic physical entities. However, if *F*-physics is something like a fully explanatory, comprehensive theory, then immortal souls could be simply added to its posits, so that everything turns out to be *NOA* *F*-physics' posits after all – viz. *F*-physicalism comes out true immortal souls notwithstanding.

Second, *F*-physicalism seems vacuous (i.e. devoid of determinate content), whereas *IP* should have determinate content (that is, it should be such that we are able to identify possible worlds at which it is false). Here the problem is simply that, given that we lack any idea about which entities *F*-physics will end up positing, we are not able to identify possible worlds such that *F*-physicalism is false at them: how can we identify a world containing entities which are something over and above *F*-physics' posits, given that we lack any idea about which entities figure among such posits?

⁵⁸ Dove (2018, §2).

⁵⁹ Ney (2008a, 1037).

Third, *F*-physicalism seems compatible with plain anti-physicalist views, whereas *IP* should be incompatible with them. In particular, *F*-physicalism seems compatible with the fundamental mentality thesis (i.e. the claim that some metaphysically fundamental entities are mental⁶⁰), whereas *IP* should be incompatible with it. Indeed, it seems possible that *F*-physicalism is true and some basic physical entities are mental, since no conceptual constraint prevents *F*-physics' posits from being mental. However, *F*-physics' posits are arguably fundamental; hence, it seems possible that *F*-physicalism is true and some fundamental entities are mental – viz. *F*-physicalism seems compatible with the fundamental mentality thesis.

The triviality problem and the vacuity problem stem from the fact that our idea of *F*-physics is so nebulous that almost everything could figure among its posits. Hence, they can be dealt with by refining the notion of *F*-physics in such a way that not everything can figure among its posits anymore. Several refinements are suitable for this purpose. Here I focus on Janice Dowell's integrated fundamental theory account – as far as I know, the most promising and rigorous account of *F*-physics. According to it, *F*-physics is «the complete and ideal scientific theory of the world's relatively fundamental elements»⁶¹, where a theory:

- is ideal just in the case it is fully well-confirmed;
- is complete just in the case everything that can be integrated into its scope has been so integrated;
- is scientific just in the case it possesses the hallmarks of scientific theories (viz. it includes a set of explanatory hypothesis from which empirically testable implications can be derived, such implications are empirically confirmed in a certain degree, it provides a unified explanation of a variety of empirical generalizations and gains empirical support by its fit with what is antecedently known and independently observable);

⁶⁰ To sharpen ideas, let's say that an entity is metaphysically fundamental if and only if it is not *NOA* other entities. For more on metaphysical fundamentality, see Schaffer (2009) and Schaffer in Chalmers, Manley and Wasserman (2009, 347-383).

⁶¹ Dowell (2006b, 39).

- and concerns the world's relatively most fundamental elements just in the case it concerns phenomena which are relatively simple from a mereological point of view⁶².

Dowell convincingly argued that, with such an account in place, *F*-physicalism is neither trivial nor vacuous, since several entities cannot figure among *F*-physics' posits anymore – e.g. entities whose behavior is not governed by any law (e.g. miracle-performing angels) cannot figure among the posits of a scientific theory such as *F*-physics.

The fundamental mentality problem has a different source instead. It arguably stems from the fact that it seems possible that some basic physical entities turn out to be mental. Hence, it can be satisfactorily dealt with just by ruling such a possibility out by definition. More precisely, it can be dealt with by enriching the future-theory interpretation with a no-mentality constraint, in such a way that it is no more possible that some basic physical entities turn out to be mental. More precisely, let's enrich the future-theory interpretation in such a way that «basic physical entities» means entities which are both posited by *F*-physics and non-mental, so that *IP* is true if and only if everything is *NOA* non-mental entities posited by *F*-physics. So doing, it is no more possible that some basic physical entities turn out to be mental, so that the fundamental mentality problem vanishes.

1.3.4 The Negative Interpretation

To recap, I introduced two versions of the theory interpretation. Moreover, I stated their respective shortcomings and argued that, whereas the current-theory interpretation can hardly overcome them, the future-theory interpretation can be arguably honed in such a way to retain its plausibility – more precisely, it retains its plausibility if enriched with an account of *F*-physics (such as Dowell's) and a no-mentality constraint. However, it is worth pointing out that there are a couple of alternative interpretations of «basic physical entities»: the object interpretation and the negative interpretation. Let's briefly sketch them:

⁶² Other convincing accounts of *F*-physics can be conjured up by adding the ideality and the completeness constraints to alternative accounts of physics. However, I am happy with Dowell's here.

- *The Object Interpretation*: «basic physical entities» means entities required by a complete account of the intrinsic nature of paradigmatic physical objects and their constituents (where paradigmatic physical objects are just inorganic, macroscopic, commonsense objects such as rocks or washing machines⁶³), so that *IP* is true if and only if everything is *NOA* entities required by a complete account of the intrinsic nature of paradigmatic physical objects and their constituents⁶⁴;

- *The Negative Interpretation*: «basic physical entities» means fundamental non-mental entities, so that *IP* is true if and only if everything is *NOA* fundamental non-mental entities⁶⁵.

Now, I firmly believe that the object interpretation is inadequate, since its *definiens* is clearly compatible with plain anti-physicalist views (such as panpsychism)⁶⁶. However, I am also convinced that the negative interpretation has great value instead, so that I will sometimes resort to it in what follows. As far as I can see, its value mostly resides in three facts. First, it allows to characterize basic physical entities without any appeal to physics, a very valuable feature from my point of view, since in the following chapters I am going to develop a kind of physicalism (viz. Russellian physicalism) based on the loosening of the nexus between basic physical entities and physics⁶⁷. Second, the *definiens* of the negative interpretation is weaker than that of the future-theory interpretation – in the sense that the latter entails the former but not vice versa⁶⁸. Therefore, it seems

⁶³ More precisely, a (paradigmatic) physical object is an object having (enough of) the following properties: solidity, bulk, size, shape, extension in space, the capacity to move and to be moved, the capacity to undergo processes such as bending, breaking and burning. See Stoljar (2010, 52).

⁶⁴ Stoljar (2001, 256-257).

⁶⁵ Montero (1999), Montero (2001) and Papineau (2002, 40-44). For an exhaustive list of references to works endorsing the negative interpretation, see Fiorese (2016, footnote 13). I chose the label «negative interpretation» since this interpretation characterizes «basic physical entities» (and, hence, *IP*) via a double negation: they are not *NOA* other entities (viz. fundamental) and non-mental. For analogous reasons, the negative interpretation is often labeled «*via negativa*» in the literature.

⁶⁶ On the relationship between panpsychism and the object interpretation, see §3.1.3.

⁶⁷ As I will argue in §3.1, the negative interpretation of «basic physical entities» is preferable if physicalism is stated as Russellian physicalism, yet not mandatory (since Russellian physicalism might be compatible with theory-interpretations as well).

⁶⁸ That the *definiens* of the future-theory interpretation entails that of the negative interpretation but not vice versa can be established as follows. Let's suppose that everything is *NOA* non-mental entities posited by *F*-physics; given that entities posited by *F*-physics are arguably fundamental, it follows that everything is *NOA* non-mental fundamental entities. Contrariwise, even granting that everything is *NOA* non-mental fundamental entities, it does not follow that everything is *NOA* non-mental entities posited by *F*-physics, since it might be that some non-mental fundamental

advisable to rely on the negative interpretation in a discussion focused on conceivability arguments, since if you aim to confute a certain doctrine (e.g. *IP*), then you should focus on the weakest possible version of the doctrine, so that your opponent cannot rebut your arguments just weakening his claim (e.g. just weakening *IP*). Third and finally, the negative interpretation is very simple and manageable, so that it might turn out to be very useful in order to keep complications at a minimum. That said, I wish to leave the choice between the negative interpretation and the future-theory interpretation unsettled. Indeed, as far as I can see, both the conceivability challenge and my strategy to rebut it do not substantially hinge on this choice.

At this stage, we should have finally acquired a more substantial grip on *IP*. Therefore, let's finally move to the conceivability challenge and its relation with *IP* itself.

1.4 The Conceivability Challenge

Anti-physicalist conceivability arguments («conceivability arguments» for short) are arguments against *IP* based on conceivability premises – viz. premises about conceivability. They jointly constitute the conceivability challenge against physicalism. In this paragraph, I am going to present such arguments. First, I introduce both the conceivability arguments' general schema and one of its main exemplifications (i.e. the zombie argument, or *ZA* for short); second, I clarify the involved notion of conceivability; third and finally, I highlight how conceivability arguments such as *ZA* threaten *IP* quite apart from exegetical niceties concerning its components. That said, let's start from a general take on conceivability arguments.

1.4.1 Conceivability Arguments and ZA

As just said, conceivability arguments are arguments against *IP* based on conceivability premises. All of them share the same structure. First, they have two premises: one claiming that some proposition is conceivable and the other claiming that whatever is conceivable is metaphysically possible. Second, they

entities do not figure among *F*-physics' posits.

conclude via *modus ponens* that the conceivable proposition is metaphysically possible. More precisely, all of them exemplify the following logically valid schema:

Conceivability Arguments' Schema

(P1) *X* is conceivable;

(P2) whatever is conceivable is metaphysically possible;

(C) *X* is metaphysically possible.

Such arguments have been introduced in contemporary debate by Saul Kripke and David Chalmers, even if similar ones are much older, going back at least to Descartes' *Meditations* (as Kripke himself recognizes)⁶⁹.

There are many conceivability arguments, since there are many propositions whose metaphysical possibility would challenge *IP*. In general, every proposition describing a world which is a minimal basic physical duplicate but not an experiential duplicate of the actual one does the trick equally well. Some of these propositions describe so-called zombie worlds – viz. worlds which are minimal basic physical duplicates but not experiential duplicates of the actual one, since no experiential property is instantiated at them. Such worlds contain as many living human bodies as the actual one; however, these bodies are devoid of phenomenal consciousness. There is nothing it is like to be them. Resorting to Iris Murdoch's wonderful phrase, «all is silent and dark within»⁷⁰. In this technical sense, these creatures are like zombies⁷¹.

Now, *ZA* can be obtained from the aforementioned general schema by substituting the description of a zombie world for *X*. More precisely, let *PT* be the conjunction of all basic physical truths (viz. the complete basic physical truth) plus a that's all clause (that is, the claim that there are no truths except those entailed by *P*), and let *Q* be a positive existential experiential truth – something

⁶⁹ On contemporary conceivability arguments, see Kripke (1980, 144-155), Chalmers (1996, 93-171) and Chalmers (2010, 141-205). Let's note that, although Descartes' conceivability arguments are structurally similar to contemporary ones, they employ a very different notion of conceivability. More precisely, conceivability is a psychological notion in Descartes (it has to do with what appears clear and distinct to us human beings) and a logico-semantic notion nowadays (it has to do with logico-semantic relations between propositions).

⁷⁰ Murdoch (1970, 13).

⁷¹ As far as I know, the first author speaking about philosophical zombies has been Robert Kirk in Kirk (1974). For some general (and more recent) overviews on them, see Chalmers (1996, ch. 3-5), Kirk (2005, ch. 1-4), Kirk (2017, ch. 6-7) and Kirk (2019).

like, for some x , x has (conscious) experience. The description of a zombie world is just $PT \ \& \ \sim Q$, so that ZA can be stated as follows:

(ZA) Zombie Argument

(P1) $PT \ \& \ \sim Q$ is conceivable;

(P2) whatever is conceivable is metaphysically possible;

(C) $PT \ \& \ \sim Q$ is metaphysically possible.

At this stage, two questions immediately arise. First, what notion of conceivability does ZA involve? Second, why is ZA 's conclusion so threatening for IP ? I am going to close this chapter by answering them.

1.4.2 The Notion of Conceivability

What notion of conceivability does ZA involve? In other words, what does «is conceivable» exactly mean in the context of ZA ?

Conceivability is an intuitive notion, widely used both in philosophy and in common discourse⁷². It can be characterized in several ways. However, almost all usual characterizations are non-starters as far as conceivability arguments are concerned. Indeed, almost all of them are plagued by undeniable counterexamples – viz. metaphysically impossible yet conceivable (in the relevant sense) propositions⁷³. In order to clarify the notion of conceivability involved in ZA , let's begin by distinguishing four kinds of conceivability via two contrasts⁷⁴.

⁷² Marcus (2004, 479).

⁷³ For instance, «is conceivable» is sometimes taken to mean is understandable. However, it cannot have this meaning in the context of ZA , since some propositions are clearly understandable yet metaphysically impossible – e.g. false mathematical propositions seem clearly understandable yet metaphysically impossible (in fact, given that no mathematical proposition is metaphysically contingent, it turns out that, for any mathematical proposition X , if X is false, then it is metaphysically impossible). Or, alternatively, «is conceivable» is sometimes taken to mean is believable. However, it cannot have this meaning in the context of ZA , for the same reasons as before: some false mathematical propositions seem clearly believable yet metaphysically impossible. On such non-starters, see Fiocco (2007, 365-366) and Gendler, Hawthorne (2002, 7-8).

⁷⁴ Here I heavily rely on Chalmers in Gendler, Hawthorne (2002, 147-156). Note that, for technical reasons, Chalmers treats conceivability as a property of sentences, whereas I treat it as a property of propositions. Moreover, Chalmers resorts to a further contrast between primary and secondary conceivability, whereas I prefer to overlook it (since it is too tied to Chalmers' controversial two-dimensional semantics).

- (1) *Prima facie* versus ideal conceivability:
- a proposition X is *prima facie* conceivable for a subject s (let s be a generic human being) if and only if X is conceivable for s on first appearances – that is, if and only if, after some considerations, s judges that X passes the tests that are criterial for conceivability;
 - a proposition X is ideally conceivable for s if and only if X is conceivable for s after ideal rational reflection – that is, if and only if, after ideal rational reflection, s judges that X passes the tests that are criterial for conceivability⁷⁵;
- (2) Negative versus positive conceivability:
- a proposition X is negatively conceivable for s if and only if s cannot rule X out a priori – that is, if and only if X is not conceptually incoherent for s or, more precisely, s cannot derive any contradiction from the hypothesis that X using only logical principles or conceptual truths (namely, using only a priori premises)⁷⁶;
 - a proposition X is positively conceivable for s if and only if some situation verifying X is coherently modally imaginable by s – that is, if and only if s can modally imagine some situation verifying X in such a way that arbitrary details can be filled in the imagined situation without any contradiction revealing itself⁷⁷;

Combining such contrasts, four notions of conceivability come out: *prima facie* positive, *prima facie* negative, ideal positive and ideal negative conceivability. However, half of them can be quickly set aside here. More precisely, *prima facie* conceivability can be quickly set aside, since *prima facie*

⁷⁵ Ideal rational reflection can be characterized as rational reflection pursued by an ideal cognitive agent – namely, an agent obtained abstracting cognitive and material limitations (limitations in memory, logical capacities, time, etc.) away from a normal human being.

⁷⁶ Let's note that «or» here stands for an inclusive disjunction.

⁷⁷ Two clarifications. First, a situation is just a configuration of objects and properties. Second, modal imagination is usually taken as a primitive notion. The relevant contrast here is with perceptual imagination, and relies on the fact that we can modally imagine situations which cannot be perceptually imagined (e.g. Germany winning World War II, or H₂O molecules floating). Hence, modal imagination can be roughly characterized just as non-perceptual imagination.

conceivability is surely not conducive to metaphysical possibility. Indeed, there is plenty of metaphysical impossibilities which can pass the tests which are criterial for conceivability when superficially considered – e.g. very complex contradictory propositions can pass the test which is criterial for negative conceivability (that is, after superficial consideration, *s* can judge that a very complex contradictory proposition cannot be ruled out a priori, since it does not appear conceptually incoherent to her), even if they are metaphysically impossible. Therefore, just two kinds of conceivability remain: ideal negative and ideal positive conceivability. In other words, either «is conceivable» in *ZA* means is ideally, negatively conceivable, or it means is ideally, positively conceivable. Thus, let's restate *ZA* accordingly:

(NC-ZA) Negative Conceivability Zombie Argument

(P1a) $PT \ \& \ \sim Q$ is ideally, negatively conceivable for *s* – viz. even after ideal rational reflection, the hypothesis that $PT \ \& \ \sim Q$ is not conceptually incoherent for *s* (or, equivalently, even after ideal rational reflection, *s* cannot derive any contradiction from such an hypothesis using only logical principles and conceptual truths);

(P2a) whatever is ideally, negatively conceivable is metaphysically possible;

(C) $PT \ \& \ \sim Q$ is metaphysically possible.

(PC-ZA) Positive Conceivability Zombie Argument

(P1b) $PT \ \& \ \sim Q$ is ideally, positively conceivable for *s* – viz. even after ideal rational reflection, some situation verifying the hypothesis that $PT \ \& \ \sim Q$ is coherently modally imaginable by *s* (or, equivalently, even after ideal rational reflection, *s* can modally imagine some situation verifying $PT \ \& \ \sim Q$ in such a way that arbitrary details can be filled in the imagined situation without any contradiction revealing itself);

(P2b) whatever is ideally, positively conceivable is metaphysically possible;

(C) $PT \ \& \ \sim Q$ is metaphysically possible.

Both establish that there is a metaphysically possible zombie world; hence, both threaten *IP*. Moreover, each of them has pros and cons. In particular, given that ideal, positive conceivability entails ideal, negative conceivability but not

vice versa⁷⁸, (*P1a*) is weaker than (*P1b*), so that *NC-ZA* seems preferable to *PC-ZA* (establishing the same conclusion from weaker premises). However, given that ideal, positive conceivability better tracks metaphysical possibility than ideal, negative conceivability⁷⁹, (*P2b*) is more plausible than (*P2a*), so that *PC-ZA* seems preferable to *NC-ZA* (establishing the same conclusion from more plausible premises). At the beginning of the next chapter, I will argue that it is preferable to focus on *NC-ZA*. However, let's keep both versions of *ZA* in mind for now.

1.4.3 Why Physicalists Fear Zombies

Before closing the chapter, it remains to explain why *ZA* is so threatening for *IP*. More precisely, why should the existence of some metaphysically possible zombie world falsify *IP*? Here the problem is that *IP* is a claim about the actual world (not about merely possible ones), whereas *ZA* aims to establish a modal claim (viz. a claim about merely possible worlds, not about the actual one). Intuitively, there seems to be no clash between them. So why should the latter threaten the former?

In order to answer, let's start spotting that *ZA*'s conclusion (in both versions of the argument) is nothing but the negation of *MPD*. Indeed, such a conclusion simply claims that, for some metaphysically possible world *w*, *w* is a minimal basic physical duplicate but not an experiential duplicate of the actual world – which is nothing but the negation of *MPD*. In other words, *ZA* (if sound) establishes that it is not the case that *MPD*. However, granting that it is not the case that *MPD*, it follows that *IP* is false via *APA* – and, moreover, this consequence follows no matter how *IP* is exactly understood. Hence, the connection between conceivability arguments such as *ZA* and *IP* turns out to be rather straightforward: if conceivability arguments such as *ZA* are sound, then their conclusions are true; however, if their conclusions are true, then it follows that *IP* is false via *APA*, and this conclusion follows quite apart from exegetical niceties concerning *IP*'s components (so that physicalists cannot defend *IP* trying to redefine it). Indeed, to begin with, insofar as «everything» ranges over

⁷⁸ Chalmers in Gendler, Hawthorne (2002, 158). Chalmers' argument for this entailment involves his two-dimensional semantics, so that it cannot be reconstructed here. However, I believe that the core of the argument remains compelling even changing semantic framework.

⁷⁹ Chalmers in Gendler, Hawthorne (2002, 160).

experiential entities and «is *NOA*» involves supervenience stated *à la* Jackson, *APA* remains sound. Moreover, even if the debate about the interpretation of «basic physical entities» is quite lively and interesting, if both *APA* and *ZA* are sound, then *IP* turns out to be false whatever «basic physical entities» exactly means. That's why physicalists fear zombies.

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Chapter 2

The Inconceivability of Zombies

Chapter 1 revolved around a few main ideas. Here there are:

- *Intuitive Physicalism (IP)*: the claim that everything is nothing over and above (viz. *NOA*) basic physical entities;
- *Minimal Physical Duplicate Thesis (MPD)*: the claim that every minimal basic physical duplicate of the actual world is an experiential duplicate of it;
- *Zombie Worlds*: worlds which are minimal basic physical duplicates of the actual world but not experiential duplicates of it, since no experiential property is instantiated at them;
- *Zombie Argument (ZA)*: the argument according to which there is a metaphysically possible zombie world, since a proposition describing it (i.e. $PT \ \& \ \sim Q$) is conceivable in a certain technical sense, and whatever is conceivable in such a sense is metaphysically possible as well;
- *Conceivability Challenge*: the set of anti-physicalist conceivability arguments (that is, arguments which aim to undermine *IP* by deriving modal conclusions from premises about conceivability).

In the previous chapter, I clarified *IP* and stated the conceivability challenge against it. Furthermore, I stressed the generality of such a challenge as much as possible. More precisely, I highlighted that the conceivability challenge threatens *IP* no matter how it is exactly understood. Indeed, no matter how *IP* is exactly understood, it entails *MPD*. However, if conceivability arguments such as *ZA* are sound, then *MPD* is false (since their conclusions are tantamount to the negation of *MPD*). It follows that, if conceivability arguments such as *ZA* are sound (so

that the conceivability challenge turns out to be successful¹), then *IP* is false no matter how it is exactly understood.

Now it's time to defend *IP* against the conceivability challenge – more precisely, against *ZA*. There is not much room for manoeuvre here. Indeed, as just argued, if *ZA* is sound, then *IP* is false no matter how it is exactly understood. Furthermore, *ZA* is clearly valid. Therefore, if *ZA*'s premises are granted, then *IP* is false no matter how it is exactly understood. It follows that, in order to maintain *IP*, at least one of *ZA*'s premises must be rejected. As outlined in the introduction, my strategy to achieve such a result consists of two steps:

- (a) physicalism should be enriched in a Russellian way – that is, it should be stated as the conjunction of *IP* with some key claims borrowed from Russellian monism (let's call «Russellian physicalism» such an enriched physicalism);
- (b) if physicalism is enriched in a Russellian way, then it is provided with resources to rebut *ZA* – indeed, Russellian physicalism is provided with resources to compellingly establish that *ZA*'s first premise is highly doubtful and, hence, arguably rejectable.

Now, if (a)-(b) are true, then physicalism (if properly stated²) is provided with resources to rebut *ZA*. However, are (a)-(b) true? The rest of my thesis deals with this problem – that is, it tries to establish that (a)-(b) are actually true. More precisely, I argue for (b) in the current chapter, and for (a) in the next one.

As just said, this chapter deals with (b). More precisely, it deals with the relation between *ZA*'s first premise (viz. the conceivability premise, or *CP* for short), Russellian monism and physicalism. It splits into three sections. The first one discusses *CP* and explains why it looks so plausible that just a few physicalists tried to undermine it. The second one spells Russellian monism out, especially focusing on its most unclear tenet – in a nutshell, the idea that some fundamental properties (i.e. quiddities) are such that physics is silent about them in a certain relevant sense. Finally, the third section states Russellian physicalism,

¹ As observed in the incipit of chapter 1, given that the conceivability challenge is nothing but a set of anti-physicalist conceivability arguments, it turns out as successful just in the case at least one of these arguments is sound.

² That is, if stated as Russellian physicalism.

argues for (b) and rebut an appealing (yet ultimately unsuccessful) alternative way to support *CP* – that is, the idea that we should grant *CP* just because our intuitions push us in this direction. However, before moving on, some preliminaries are in order.

First off, I previously showed that *CP* is ambiguous, since the relevant notion of conceivability can be understood in two ways at least: as ideal, negative conceivability or as ideal, positive conceivability. Accordingly, two disambiguations of *CP* are available:

(*PIa*) $PT \ \& \ \sim Q$ is ideally, negatively conceivable;

(*PIb*) $PT \ \& \ \sim Q$ is ideally, positively conceivable.

Hereafter, I stick to the first one. In other words, by «conceivability» I mean ideal, negative conceivability, and by *CP* I mean *PIa*. In general, it is advisable to rely on ideal, negative conceivability, given that such a notion is clearer and simpler than that of ideal, positive conceivability – where the unclarity of this latter notion is mainly due to the blurry idea of modal imagination involved in it³. Consequently, in this chapter I aim to show that Russellian physicalism is provided with resources to compellingly establish that *PIa* is highly doubtful and, hence, arguably rejectable.

Still much generality seems lost in this way. Indeed, to begin with, conceivability arguments (including zombie ones) can be stated in terms of ideal, positive conceivability, whereas I focus just on ideal, negative conceivability. Furthermore, conceivability arguments can be stated in terms of other physicalistically problematic propositions (that is, other propositions describing worlds which are minimal basic physical duplicates but not experiential duplicates of the actual one⁴), whereas I focus just on $PT \ \& \ \sim Q$. Therefore, it

³ For this line of thought, see Balog in McLaughlin, Beckerman and Walter (2009).

⁴ Such propositions are physicalistically problematic since their metaphysical possibility is incompatible with *MPD* and, therefore, with *IP*. Besides those describing zombie worlds, the most discussed physicalistically problematic propositions are arguably those describing inverted worlds – i.e. worlds which are minimal basic physical duplicates but not experiential duplicates of the actual one, since the distribution of some kind of experiential properties is inverted at them. To make things clearer, let's describe a particular inverted world w (viz. a world at which experiential redness and experiential greenness are inverted) as follows: first, w is a minimal basic physical duplicate of the actual world; second, whenever a subject at the actual world has an experience instantiating experiential redness (e.g. a visual experience of ripe tomatoes in normal conditions), its counterpart at w has an experience instantiating experiential greenness (so that ripe tomatoes look green in normal conditions at w); third, whenever a subject at the actual world has an

might seem that, even if (a)-(b) are true, the conceivability challenge still threatens *IP* (since it suffices that one conceivability argument is sound in order for such a challenge to succeed). However, my line of thought easily generalizes – that is, if it is effective, then all conceivability arguments can be rebutted, since their first premises turn out to be systematically rejectable. Indeed, let’s assume that (a)-(b) are true if *CP* is understood as *PIa*. It follows that physicalism (in its Russellian version) is provided with resources to compellingly establish that *PIa* is highly doubtful and, hence, arguably rejectable. However, *PIb* entails *PIa*⁵, so that *PIb* turns out to be arguably rejectable in turn (qua entailing highly doubtful consequences). Furthermore, nothing in my line of thought in favor of (a)-(b) hinges on features of *PT* & $\sim Q$ which are not shared by other physicalistically problematic propositions. Indeed, my arguments mainly rely on *PT*, and *PT* occurs in all physicalistically problematic propositions⁶. It follows that, if my line of thought successfully establishes (a)-(b) when the object of conceivability is *PT* & $\sim Q$, it should establish the same result even when the objects of conceivability are other physicalistically problematic propositions. That said, let’s move to *CP*.

2.1 The Conceivability of Zombies

In this section, I focus on the conceivability premise (*CP* for short), according to which *PT* & $\sim Q$ is ideally, negatively conceivable – in the sense that, even after ideal rational reflection, it is not possible to derive any contradiction from *PT* & $\sim Q$ using only logical principles or conceptual truths⁷.

experience instantiating experiential greenness (e.g. a visual experience of grass in normal conditions), its counterpart at *w* has an experience instantiating experiential redness (so that grass looks red in normal conditions at *w*). The *locus classicus* of inverted worlds in contemporary debate is Shoemaker (1982); for a general overview, see Byrne (2018).

⁵ Indeed, as observed at the end of §1.4.2, ideal, positive conceivability entails ideal, negative conceivability, so that *PIb* entails *PIa*.

⁶ More precisely, my Russellian physicalist case against *CP* relies on two key features enjoyed by *PT* according to Russellian physicalism: *PT* is not a truth of physics (viz. a true propositional constituent of physical theories), and *PT* involves concepts such that we are massively ignorant about them (namely, quiddistic concepts). Let’s further point out that *PT* occurs in all physicalistically problematic propositions, since all such propositions describe worlds which are minimal basic physical duplicates of the actual one – and, in order to achieve this goal, such propositions must arguably include the complete basic physical truth enriched by a that’s all clause (that is, they must arguably include *PT*).

⁷ Given that conceivability is a relation between a proposition and a cognitive agent, *CP* should involve a reference to a cognitive agent, as it did in §1.4.2 (that is, it should be stated as follows: *PT* & $\sim Q$ is ideally, negatively conceivable for *s* – viz. even after ideal rational reflection, *s* cannot derive any contradiction from *PT* & $\sim Q$ using only logical principles or conceptual truths). Still I

Just a few physicalists tried to undermine CP^8 . Indeed, physicalists usually prefer to rebut conceivability arguments undermining their second premise instead. To borrow Chalmers' terminology, physicalists can be grouped into type-A and type-B ones, where the former reject the first premises of conceivability arguments (denying that physicalistically problematic propositions are actually conceivable), whereas the latter reject the second premise (denying that whatever is conceivable is metaphysically possible)⁹. Sticking to this terminology, most physicalists are type-B ones¹⁰: they grant that physicalistically problematic propositions are conceivable, while however denying that whatever is conceivable is metaphysically possible. In particular, most of them maintain that experiential concepts are such that propositions involving them (e.g. $\sim Q$ and, *a fortiori*, PT & $\sim Q^{11}$) turn out to be (at least sometimes) conceivable yet metaphysically impossible¹². This is not my strategy: Russellian physicalism is a type-A view – hence, it rejects CP^{13} . Furthermore, Russellian physicalism does not hinge on features of concepts involved in experiential propositions such as $\sim Q$ (viz. experiential concepts), but on features of concepts involved in PT . More precisely, Russellian physicalism holds that PT (and, *a fortiori*, CP) involves

drop such a reference from now on, taking for granted that «is ideally, negatively conceivable» is a shorthand for «is ideally, negatively conceivable by a normal human being (that is, by a human being with normal cognitive capacities)». It is not entirely clear why normal human beings should have such a privileged status – that is, why the notion of conceivability which is relevantly tied to metaphysical possibility should be relativized to them. However, the fact that just ideal conceivability is relevant here arguably mitigates the problem, ruling out many cognitive idiosyncrasies of ours and putting us on a par with other conceptually endowed cognitive agents.

- ⁸ Most notably, Lewis (1966), Jackson (1998), Kirk (2005) and Dennett in Alter, Walter (2007, ch. 1).
- ⁹ Chalmers mentions a third kind of physicalists as well: type-C physicalists, according to which physicalistically problematic propositions are currently conceivable by us, but not conceivable by ideal rational agents. However, once CP is exactly spelt out (e.g. once it is spelt out as PIa), type-C physicalists must reject it, joining type-A ranks. The *locus classicus* of this taxonomy is Chalmers (2002, 247-261).
- ¹⁰ Among the major contributions to type-B physicalism, let's remember at least Loar (1990), Hill (1997), Hill and McLaughlin (1999) and Papineau (2002).
- ¹¹ Keep in mind that $\sim Q$ is the following proposition: *it is not the case that, for some x , x has experience*. Quite obviously, it involves an experiential concept – viz. *to have experience*. On experiential concepts, see §2.1.1.
- ¹² This rebutting strategy has been famously labeled «phenomenal concept strategy» by Daniel Stoljar – see Stoljar (2005). For a general overview, see Carruthers, Veillet (2007); for a critical evaluation, see Demircioglu (2013).
- ¹³ Russellian physicalism does not inevitably qualify as a type-A view, since it can be spelt out in such a way to be compatible with the conceivability of zombie worlds. More precisely, Russellian physicalism turns out to be compatible with the conceivability of zombie worlds if such worlds are characterized as minimal functional duplicates of the actual world lacking consciousness; see Montero in Alter, Nagasawa (2015, 213-214) on this point. However, granting that zombie worlds are characterized as I did in chapter 1 (viz. as minimal basic physical duplicates of the actual world lacking consciousness), Russellian physicalism most naturally qualifies as a type-A view. For a version of Russellian physicalism as a type-A view, see Pereboom (2011).

quiddistic concepts (roughly, concepts characterizing certain basic physical properties finely enough to not be satisfied at any possible world which is a functional duplicate of the actual one), and that quiddistic concepts are such that we should not accept conceivability claims involving them – so that, in particular, we should not accept *CP*.

Now, *CP* looks so overwhelmingly plausible that type-A views may seem nothing but a bunch of non-starters. However, why does it seem so plausible? Its plausibility crucially relies on the alleged lack of a certain kind of conceptual truths – more precisely, a kind of physical-experiential conceptual truths which might be labeled «disputed conceptual truths». Indeed, the main argument for *CP* can be summed up as follows:

Conceptual Truths Argument

(*P1*) there are no disputed conceptual truths;

(*P2*) if there are no disputed conceptual truths, then *CP* is true;

(*C*) *CP* is true.

In the current section, I focus on this argument, highlighting its strength. More precisely, I kick off characterizing the main notion involved in it (namely, that of disputed conceptual truth), then I report the main arguments in favour of *P1* and, finally, I argue for *P2*.

The conceptual truths argument is charming, yet ultimately unsuccessful from a Russellian physicalist perspective. Indeed, just to give a glimpse of my strategy, in §2.3.2 I will argue that, even granting *P2*, *P1* is utterly unwarranted if Russellian physicalism is true, since the main arguments in its favour turn out to be flawed in such a case. However, first things first. So let's start spelling out the notion of disputed conceptual truth.

2.1.1 Disputed Conceptual Truths

A disputed conceptual truth is a conditional conceptual truth characterized by the fact that its antecedent is a basic physical truth and its consequent is an experiential truth contradicting the second conjunct of some physicalistically problematic proposition (a «problematic experiential truth», for short). This

characterization involves three main notions: conditional conceptual truth, basic physical truth and problematic experiential truth. Let's spell them out in turn.

To begin with, a truth is just a true proposition. Furthermore, a conditional proposition is just a complex proposition whose main logical connective is the material conditional¹⁴. Hence, a conditional truth is just a true conditional proposition – e.g. *if Aristotle is a philosopher, then Earth is round*¹⁵. Finally, a truth is conceptual just in the case it suffices to master its constitutive concepts and attentively reflect on their logical relations in order to know it. The idea is that a conceptual truth is a proposition whose truth exclusively relies on logical relations between its constitutive concepts, so that it should suffice to master such concepts and attentively reflect on their logical relations in order to know the proposition itself – e.g. *triangles have three angles*¹⁶. Hence, to sum up, a conditional conceptual truth is a true conditional proposition such that it suffices to master its constitutive concepts and attentively reflect on their logical relations in order to know the proposition itself – e.g. *if something is a number, then it is not a table*¹⁷. Now, propositions and concepts are surrounded by vexed philosophical issues. Still these issues are mostly irrelevant here, since the only essential thing for my purposes is that propositions are truth-bearers constituted by concepts. So much for conditional conceptual truths. Let's move now to basic physical ones.

At a minimum, a basic physical truth should be a true proposition about basic physical entities. However, this is not very satisfactory unless the physicality

¹⁴ It is widely agreed that conditional propositions expressed by natural language conditional utterances are not just complex propositions whose main logical connective is the material conditional. Indeed, the material conditional seems incapable to capture any (not merely truth-functional) connection between antecedent and consequent, even if some connection of this kind seems constitutive of propositions expressed by natural language conditional utterances. However, conditional propositions are satisfactorily definable in this way in the present context, since what is at stake here is just the status of certain material conditionals – see Chalmers, Jackson (2001, 316) on this point.

¹⁵ I use italics to refer to propositions and concepts, so that *Aristotle is a philosopher* refers to the proposition that Aristotle is a philosopher, and *Aristotle* refers to the concept of Aristotle.

¹⁶ I talk about logical relations between concepts quite loosely here. Indeed, those relations between concepts in virtue of which certain propositions involving them turn out to be conceptually true are not (strictly speaking) logical, depending on the contents of such concepts instead – e.g. those relations between *triangles* and *having three angles* in virtue of which *triangles have three angles* turns out to be conceptually true are not (strictly speaking) logical, depending on contents of *triangles* and *having three angles* instead. These relations might be better characterized as a priori inferential relations, that is inferential relations between concepts which are a priori knowable (since it suffices to master the relevant concepts and attentively reflect on them in order to grasp such relations). Still, for the sake of simplicity, I speak about logical relations in the main text.

¹⁷ See Stoljar (2005, 479) for a similar example.

problem is settled somehow – indeed, it is not very satisfactory to characterize a basic physical truth as a true proposition about basic physical entities if it is not clear what «basic physical entities» exactly means. The question is tricky, but fortunately I do not need to solve it here¹⁸. Indeed, for my purposes, it suffices to distinguish between two accounts of basic physical truths: a physics-based account and a physics-independent account. According to the former, all basic physical truths are truths of physics (that is, true propositional constituents of physical theories) whereas, according to the latter, not all basic physical truths are truths of physics (maybe some basic physical truths are truths of physics, but not all of them). I can remain neutral on which account I prefer for now. Just to give a glimpse of my strategy, in the next subsection I will highlight that the main arguments in favour of *CP* actually rely on the physics-based account of basic physical truths; furthermore, in §2.3.2 I will argue that Russellian physicalism undercuts such an account (since it entails that *PT*, a paradigmatic basic physical truth, is not a truth of physics), substantially jeopardizing our reasons to believe that *CP* is true.

The last notion involved in the aforementioned characterization of disputed conceptual truths is that of problematic experiential truth. What are such truths exactly? To begin with, an experiential truth is a true proposition involving experiential concepts – that is, what philosophers usually call «phenomenal concepts». Such concepts attracted much attention, since several physicalists tried to undermine anti-physicalist arguments by appealing to them. Roughly, experiential concepts are those concepts of experiential entities that we apply to them in introspective thoughts (e.g. *experience*, *pain*, *red visual sensation*, etc.). They can be usefully characterized via Mary’s thought experiment. As well known, Mary is an imaginary color scientist who spent her whole life in a black-and-white room, acquiring complete scientific knowledge of human color vision via lessons transmitted on a black-and-white television¹⁹. It is widely agreed that she lacks certain concepts of experiential entities – e.g. a certain *red visual sensation* concept. Now, experiential concepts can be profitably characterized as those concepts of experiential entities lacking from Mary’s conceptual repertoire

¹⁸ I will return on the physicality problem in chapter 3, where I will discuss its relation to Russellian physicalism.

¹⁹ The *loci classici* of the thought experiment are Jackson (1982) and Jackson (1986). Many useful discussions of it are collected in Ludlow, Nagasawa and Stoljar (2004).

– or, more generally, those concepts of experiential entities such that any scientifically knowledgeable individual deprived of certain relevant experiences would lack²⁰. That said, let's characterize problematic experiential truths as follows: X is a problematic experiential truth just in the case X is a true proposition involving experiential concepts and it is such that, for some physicalistically problematic proposition $PT \ \& \ Y$, X contradicts Y – e.g. given that Q (viz. *for some x , x has experience*) is a true proposition involving experiential concepts (viz. *to have experience*), and it is such that there is a physicalistically problematic proposition (i.e. $PT \ \& \ \sim Q$) such that Q contradicts its second conjunct, then Q turns out to be a problematic experiential truth (that is, X ranges over Q).

To recap, a disputed conceptual truth is a true conditional proposition such that it suffices to master its constitutive concepts and attentively reflect on their logical relations in order to know it, its antecedent is a basic physical truth, and its consequent is a true proposition involving experiential concepts and contradicting the second conjunct of some physicalistically problematic proposition. Now, why does it seem that there are no disputed conceptual truths – viz. no truths satisfying all these clauses?

2.1.2 *The Case Against Disputed Conceptual Truths*

As far as I know, the lack of disputed conceptual truths has been rarely argued for. Indeed, it could seem just obvious that there are none. However, there are some arguments in the vicinity: the Quinean argument, the physics argument and the structure and dynamics argument. Let's examine them in turn.

The Quinean argument is an argument against any kind of conceptual truths – and, *a fortiori*, against disputed conceptual ones. It is not very popular nowadays. However, it has been hugely influential in the past, so that it is worth mentioning. It runs as follows. Quine convincingly argued that there are no analytic truths²¹; however, conceptual truths are nothing but analytic truths under cognitive clothes

²⁰ Other puzzling features are often attributed to experiential concepts. For an exhaustive list of them, see Balog in McLaughlin, Beckerman and Walter (2009, 299-300). For a fine-grained taxonomy of experiential concepts, see Chalmers in Smith, Jokic (2003, 220-234). Many useful discussions of experiential concepts and their relation to physicalism are collected in Alter, Walter (2007).

²¹ Quine (1951).

(that is, conceptual truths are equivalent to analytic truths with propositions constituted by concepts instead of sentences constituted by words as truth-bearers); hence, there are no conceptual truths either. I have three replies. First, I do not think that Quinean arguments fit the bill. Indeed, even if sound, they do not establish that there are no analytic truths, but at most that the analytic/synthetic distinction is fuzzy, or that the notion of analyticity is primitive²². Second, even if conceptual truths were controversial since Quinean criticisms to analytic truths were convincing and extendable to them, physicalists should not rely on their alleged illegitimacy. Indeed, the question of the tenability of physicalism should be kept apart from that of the legitimacy of conceptual truths, given that the former is an ontological issue whereas the latter is a semantic one, and we should strive to keep ontological and semantic issues apart as much as possible (especially insofar as semantic issues under consideration are highly controversial, so that they risk to threaten physicalism itself). Third and finally, a sociological consideration. Conceptual truths are taken for granted by all parties engaged in the debate about physicalism and conceivability. Borrowing a Wittgenstenian turn of phrase, we could say that conceptual truths are part of the language game played by philosophers engaged in this debate. Therefore, it seems that they can be safely assumed here. So much for the Quinean argument. Let's move now to remaining ones.

The physics argument and the structure and dynamics argument hinge on two main ideas. First off, they hinge on a well-established connection between conceptual truths and a priori ones. Roughly, an a priori truth is a truth such that it is possible to know it in such a way that the epistemic justification on which such a knowledge relies is not empirical at all – for instance, *two plus two equals four* seems a priori in this sense²³. The connection with conceptual truths is that conceptual truths are arguably a priori. Hereafter, I take such a connection for granted, since it can be plainly established as follows. By definition, in order to know a conceptual truth, it suffices to master its constitutive concepts and attentively reflect on their logical relations. Thus the epistemic justification on

²² For this reply, see Grice, Strawson (1956).

²³ Two remarks. First, this definition of a priori truths is quite standard, yet approximate – see BonJour in Audi (1999, 35-36) for clarifications. Second, empirical epistemic justification can be roughly characterized as epistemic justification partly constituted by experience (mainly perceptual and introspective experience); it follows that non-empirical epistemic justification is just epistemic justification which is not even partly constituted by experience.

which such a knowledge relies is entirely of the following kind: such-and-such concepts (mastered by me) are logically related in such-and-such ways. Still this kind of epistemic justification is not empirical at all. It follows that, in general, it is possible to know conceptual truths in such a way that the epistemic justification on which such a knowledge relies is not empirical at all – that is, conceptual truths are a priori²⁴. Second, the physics argument and the structure and dynamics argument hinge on the physics-based account of basic physical truths – that is, they hinge on the idea that basic physical truths are truths of physics. Indeed, the physics argument explicitly includes such an idea among its premises, and the structure and dynamics argument requires such an idea in order for one of its premises to be well-supported. That said, let's sketch each argument in turn.

The physics argument is not explicit in the literature, so that it has never been explicitly endorsed. However, I think that it lurks in the background in many discussions about physicalism and conceivability. Indeed, it seems to me that something akin to it is covertly assumed to justify widespread skepticism about disputed conceptual truths. It can be stated as follows:

Physics Argument

(P1) no conditional true proposition whose antecedent is a truth of physics and whose consequent is an experiential truth (or, more specifically, a problematic experiential truth) is a priori;

(P2) if a truth is conceptual, then it is a priori;

(C1) no conditional true proposition whose antecedent is a truth of physics and whose consequent is a problematic experiential truth is conceptual – viz. there is no conditional conceptual truth whose antecedent is a truth of physics and whose consequent is a problematic experiential truth;

(P3) all basic physical truths are truths of physics;

(C) there is no conditional conceptual truth whose antecedent is a basic physical truth and whose consequent is a problematic experiential truth – viz. there are no disputed conceptual truths.

²⁴ Many insightful discussions of the connection between conceptual truths and a priority are collected in Boghossian, Peacocke (2001). See also Chalmers (2012, 12-13).

Now, this argument is clearly valid. Furthermore, *P2* is well-established. However, in §2.3.2 I will argue that the physics argument is unsuccessful if Russellian physicalism is true. Indeed, if Russellian physicalism is true, then the physics-based account of basic physical truths is wrong. This in turn entails that *P3* is false, so that the physics argument turns out to be unsound from a Russellian physicalist perspective (since it involves false premises according to such a perspective).

The structure and dynamics argument has been explicitly discussed instead, even if with different aims²⁵. Here I turn such an argument against disputed conceptual truths. Even the structure and dynamics argument hinges on the idea that basic physical truths are truths of physics. However, while the physics argument explicitly includes such an idea among its premises, the structure and dynamics argument involves it just indirectly – more precisely, the structure and dynamics argument involves a premise (i.e. *P1*) whose justification heavily depends on the idea that basic physical truths are truths of physics²⁶. That said, the structure and dynamics argument can be stated as follows:

Structure and Dynamics Argument

(*P1*) all basic physical truths are structural truths;

(*P2*) it is not possible to a priori derive (viz. to derive using only a priori truths such as logical principles and conceptual truths²⁷) non-structural truths from structural truths;

(*C1*) it is not possible to a priori derive non-structural truths from basic physical truths;

(*P3*) experiential truths (and, *a fortiori*, problematic experiential truths) are non-structural truths;

(*C2*) it is not possible to a priori derive problematic experiential truths from basic physical truths;

²⁵ The *locus classicus* of the structure and dynamics argument is probably Chalmers (2003, 258-260). For a thoroughgoing discussion of it, see Alter (2016). Curiously, Alter lists five main functions of the argument, overlooking the current one – that is, establishing that there are no disputed conceptual truths.

²⁶ On this point, see §2.3.2.

²⁷ It's here that the connection between conceptual truths and a priori ones bears on the structure and dynamics argument: indeed, the notion of a priori derivation required by the argument demands that conceptual truths are a priori.

(P4) if there are disputed conceptual truths, then it is possible to a priori derive problematic experiential truths from basic physical truths;

(C) there are no disputed conceptual truths.

The argument is valid. Furthermore, P4 is quite uncontroversial. Indeed, let's suppose that there are disputed conceptual truths – namely, let's suppose that, for some basic physical truth *B* and some problematic experiential truth *E*, if *B*, then *E* is a conceptual truth. Then it is trivially possible to a priori derive a problematic experiential truth (viz. *E*) from a basic physical truth (viz. *B*) via *modus ponens*²⁸. However, even granting the quite contentious P2 and P3²⁹, in §2.3.2 I will argue that the structure and dynamics argument is unsuccessful if Russellian physicalism is true. Indeed, if Russellian physicalism is true, then the physics-based account of basic physical truths is wrong. This in turn entails that P1 is unsupported (since the main argument in its favour relies on such an account), so that the structure and dynamics argument turns out to be dialectically weak from a Russellian physicalist perspective (since it involves unsupported premises according to such a perspective).

2.1.3 Why Zombies Seem Conceivable

To sum up, I characterized disputed conceptual truths (§2.1.1) and explained why it seems so plausible that there are none (§2.1.2). In order to conclude my reconstruction of the case for CP, it remains to establish that, if there are no disputed conceptual truths, then CP is true. The reasoning here is very straightforward. To begin with, let's suppose that CP is false. Hence it is possible, at least after ideal rational reflection, to derive a contradiction from PT & ~Q using only logical principles or conceptual truths. However, it is surely not possible to derive such a contradiction using only logical principles – since this would entail that PT & ~Q is formally inconsistent (as much as *it is raining and it is not raining*), which is surely not the case³⁰. Therefore, there are conceptual

²⁸ More precisely, it is possible to a priori derive *E* from *B* via the following argument: (P1) *B*; (P2) if *B*, then *E*; (C) *E*.

²⁹ For a critical evaluation of them, see Stoljar (2006, 144-153).

³⁰ It might be objected that PT & ~Q could be formally inconsistent after all. More precisely, it might be suggested that PT & ~Q is formally inconsistent because having experience is a basic physical property, so that *Q* turns out to be a basic physical truth occurring among PT's conjuncts – and, consequently, PT & ~Q turns out to be formally inconsistent. However, the assumption that having experience is a basic physical property cannot be granted in the present context (that is, in

truths by means of which it is possible to derive a contradiction from $PT \ \& \ \sim Q$ – that is, conceptual truths such as *if B_1, \dots, B_n , then Q* , where B_1, \dots, B_n are PT 's conjuncts (viz. basic physical truths). However, by definition, such conceptual truths are nothing but disputed conceptual truths. It follows that there are disputed conceptual truths. To recap, if CP is false, then there are disputed conceptual truths. Therefore, by contraposition, if there are no disputed conceptual truths, then CP is true.

To conclude, CP seems so compelling since there is a straightforward argument in its favour (i.e. the conceptual truths argument) based on extremely plausible premises (viz. that there are no disputed conceptual truths and that, if there are no such truths, then CP is true). However, one of these premises is not so plausible after all – more precisely, it is quite doubtful that there are no disputed conceptual truths from a Russellian physicalist perspective (that is, the perspective that I wish to endorse). Indeed, the main arguments against disputed conceptual truths are flawed if Russellian physicalism is true (in particular, the physics argument is unsound qua involving false premises and the structure and dynamics argument is dialectically weak qua involving unsupported premises), so that the claim that there are no disputed conceptual truths turns out to be unwarranted from a Russellian physicalist perspective. Now, in order to establish these points, Russellian physicalism is needed. However, Russellian physicalism is just a physicalist version of Russellian monism; hence, let's kick off from this latter doctrine.

the context of the debate about conceivability arguments). Indeed, if having experience is a basic physical property, then pansychism (or something very similar) is true (since basic physical properties are extremely widespread across the universe); however, pansychism and quasi-pansychist doctrines are incompatible with physicalism, so that the claim that having experience is a basic physical property entails that physicalism is false. Consequently, this claim cannot be granted in the context of the debate about conceivability arguments, since it implies that the whole debate is somewhat superfluous – indeed, it implies that physicalism is false quite apart from complex issues surrounding conceivability arguments. Let's further spot that it is not completely uncontroversial that physicalism and pansychism are incompatible – see Strawson (2008, ch. 1-2) and Stoljar (2017, §12.3) for a contrary opinion. However, their incompatibility is the default position in the debate, so that I feel entitled to assume it here.

2.2 Russellian Monism

In this section, I spell Russellian monism out whereas, in the next one, I join it to *IP* in order to state a physicalist version of the theory – viz. Russellian physicalism. In a nutshell, Russellian monism is a doctrine according to which some fundamental properties metaphysically constituting experiential ones are such that physics is silent (in a certain relevant sense) about them³¹. Labeling such properties «quiddities», Russellian monism can be broken up into three main claims about quiddities:

Russellian Monism

(*RM1*) there are quiddities;

(*RM2*) quiddities metaphysically constitute experiential properties;

(*RM3*) physics is silent (in a certain relevant sense) about quiddities³².

Russellian monism is usually traced back to Bertrand Russell's *The Analysis of Matter* (1927) – hence its name³³. However, it starkly differs from Russell's neutral monism³⁴. Indeed, even if both doctrines maintain that there are

³¹ In order to highlight their elusiveness, Barbara Montero labeled such properties «inscrutables»; see Montero (2010).

³² See Alter, Pereboom (2019) and Alter, Nagasawa (2015) on such tenets. To be precise, according to Alter, Pereboom (2019, §1.1), Russellian monism is committed just to the weaker claim that quiddities are relevant to consciousness. However, they also point out that «[even if t]here is no consensus among Russellian monists on exactly how quiddities are relevant to consciousness... many claim that phenomenal properties are *constituted* by quiddities», where the relevant notion of constitution is that of metaphysical constitution. Let's further point out that this notion is a strict relative of that of being *NOA* analyzed in chapter 1. Indeed, as Philip Goff rightly observed, «the defining characteristic of [metaphysical] constitution... [is] that constituted states of affairs are *nothing over and above* states of affairs constituting them», Goff in Brüntrup, Jaskolla (2017, 295). More formally, the relation between metaphysical constitution and being *NOA* is that y_1, \dots, y_n metaphysically constitute x if and only if x is *NOA* y_1, \dots, y_n (plus, eventually, some other entities). Therefore, the same range of *analysans* envisioned in relation to the notion of being *NOA* (viz. reduction, metaphysical supervenience, metaphysical grounding and realization) arguably applies to metaphysical constitution as well.

³³ See Chalmers (2002, 265) on such an ancestry. Let's spot that, apart from Russell and some contemporary analytic philosophers, notable thinkers such as Kant, Schopenhauer, Schlick and Feigl endorsed positions strongly resembling Russellian monism over the last three centuries – see De Gruyter (2015) on this point and Stubenberg in Lehrer, Marek (1997) for a brief history of these remarkable ancestors. Moreover, let's note that the rebirth of Russellian monism in contemporary analytic philosophy is not attributable to any Russellian heritage. Contrariwise, it should be mainly attributed to Grover Maxwell and Michael Lockwood's seminal contributions, which are only superficially linked with Russell's ideas – see Maxwell in Savage (1978, 365-404) and Lockwood (1989).

³⁴ On the contrast between Russell's views and current versions of Russellian monism, see Stubenberg in Brüntrup, Jaskolla (2017, ch. 14).

fundamental items which metaphysically constitute experiential ones and are such that physics is silent (in a certain relevant sense) about them, Russell's neutral monism is additionally committed to the claims that such items are neutral (viz. neither physical nor mental³⁵) and that they metaphysically constitute all non-fundamental items, whereas Russellian monism is not committed to them. More precisely, most Russellian monists explicitly deny that quiddities are neutral, holding that they are basic physical properties or experiential properties instead. Furthermore, even if Russellian monists usually hold that quiddities metaphysically constitute all non-fundamental properties (not only experiential ones), they do not endorse such a claim as a basic commitment of their doctrine, deeming it just as a very plausible way to elaborate on it. In particular, the idea that quiddities metaphysically constitute all non-fundamental properties is a very plausible way to elaborate on Russellian monism since quiddities are usually characterized as fundamental properties playing functional roles specified in physics³⁶, and it is plausible that properties of this kind metaphysically constitute all non-fundamental properties (not only experiential ones)³⁷.

In this section, I spell Russellian monism out, especially focusing on its most unclear tenet – viz. *RM3*. More precisely, the section is structured as follows. First off, I clarify the notion of quiddities, highlighting that, with such a notion in place, *RM1-RM2* turn out to be rather straightforward. Then I recur to the Ramsey-Lewis approach to physics in order to spell *RM3* out as rigorously as possible. Roughly, the Ramsey-Lewis approach is a philosophical conception of physics aimed to pull its cognitive content out. In the second subsection, I focus on the approach itself, whereas in the third one I argue that, joining it to the usual characterization of quiddities, it becomes possible to firmly grasp why and in which sense *RM3* is true. That said, let's start from quiddities.

³⁵ This is just the main interpretation of neutrality; for an exhaustive list of alternatives, see Stubenberg (2018, §1).

³⁶ For more on this point, see §2.2.1.

³⁷ As Montero nicely puts it, given the way in which quiddities are usually characterized, they arguably «form the dependence base for the entire concrete world, only a very small portion of which is mental», Montero (2010).

2.2.1 Quiddities

Russellian monism clearly hinges on the notion of quiddities, since all its tenets crucially involve such a notion. To a first approximation, quiddities are just fundamental properties playing functional roles specified in physics. The idea is that physics is mainly in the business of specifying functional roles of fundamental properties attributing logical, mathematical, spatial, temporal, causal and nomic relations to them via its theories, so that quiddities turn out to be just fundamental properties playing these roles (viz. fundamental properties entertaining such relations)³⁸. To make things clearer, let's look at an example. Current physics specifies a role for the arguably fundamental property having mass («mass» for short)³⁹ via relativity theory. For instance, current physics tells us (via relativity theory) that there is a mathematical relation between (numerical values of) mass and energy, a relation according to which the energy of a physical system equals its mass multiplied by light speed squared (this is the famous $E = mc^2$ principle); current physics tells us (via relativity theory again) that there is a causal relation between things having mass, a relation according to which such things attract each other; and so on and so forth. These relations jointly constitute a functional role specified in physics and played by mass (that is, the mass-role). Therefore, in this particular case, the involved quiddity is just the property playing the mass-role: mass itself⁴⁰.

³⁸ See Chalmers (2012, 348) and Chalmers in Brüntrup, Jaskolla (2017, 26) for similar characterizations. Two clarifications are in order. First, in line with previous usage, «physics» is a shorthand for «fundamental physics». Second, quiddities are sometimes characterized in an alternative way, that is as properties which can be swapped or replaced in the world causal-nomic structure without making any qualitative difference – see Cowling (2016, §7.1) on this point. Here the idea is that quiddities are properties such that the causal-nomic structure of the world does not necessitate their distribution, so that there are possible worlds with the same causal-nomic structure of the actual one but a different distribution of quiddities. Now, I agree that quiddities enjoy a certain kind of modal independence from the causal-nomic structure of the world. Still, I do not directly appeal to swapping or replacing scenarios in order to characterize this modal independence. Contrariwise, I am going to characterize such a modal independence in terms of a certain supervenience claim later on in this subsection, and I will show that this supervenience claim vindicates swapping and replacing scenarios in the next chapter (in particular, see §3.1.3).

³⁹ Even from a physicalist perspective, it's doubtful that mass is a genuinely fundamental property – indeed, it might not be posited by *F*-physics, being so displaced from the fundamental level of reality and relegated among derivative physical entities (at least if the future-theory interpretation of «basic physical entities» is correct). However, let's grant its fundamentality here.

⁴⁰ That the property playing the mass-role (i.e. the relevant quiddity) is identical to mass or not is a terminological issue, ultimately depending on the semantic of the term «mass». More precisely, if «mass» refers to what plays the mass-role, then mass is identical to the relevant quiddity (since both mass and the relevant quiddity are identical to what plays the mass-role in such a case); if «mass» refers to the mass-role instead, then mass is not identical to the relevant quiddity (since

However, this basic account raises an immediate difficulty: if quiddities are just fundamental properties playing functional roles specified in physics (e.g. mass), they should be quite uncontroversial; still this is not the case at all, since several philosophical theories strenuously reject them⁴¹. In order to understand why quiddities are so contentious, it must be pointed out that they are usually characterized as modally independent (at least to a certain extent) from functional roles (where the modality relevant here is metaphysical)⁴². In other words, according to the modal account (which is something like the received view of quiddities), quiddities are not necessitated by functional roles – or, equivalently, they do not supervene on them. Resorting to technical tools employed in chapter 1, let’s spell quiddities’ modal independence out as follows: quiddities (if there are any) do not globally supervene with metaphysical force on functional roles – or, more precisely, granting that quiddities are actually instantiated, there is a metaphysically possible world w such that w is a functional duplicate of the actual world (viz. it has the same world-wide pattern of distribution of functional roles of the actual world) but not a quiddistic duplicate of it (viz. it has not the same world-wide pattern of distribution of quiddities of the actual world)⁴³.

Hence, to recap, quiddities are fundamental properties playing functional roles specified in physics and still modally independent from functional roles in the aforementioned technical sense. With this account at hand, *RMI-RM2* turn out to be rather straightforward. In fact, *RMI* just claims that such properties are actually instantiated (so that there is a metaphysically possible world which is a

mass is identical to a certain functional role in such a case, whereas the relevant quiddity is identical to what plays such a role). In the main text, I rely on the former account, identifying mass with the quiddity playing the mass-role. However, nothing substantive hinges on this. The substantive point is just that quiddities are fundamental properties playing functional roles specified in physics (so that they can be both referred and informatively characterized by physical theories as players of such roles). Whether quiddities are labeled with terms such as «mass» or not is an ultimately unimportant terminological issue.

⁴¹ For a taxonomy of possible positions in this debate, see Schaffer (2005).

⁴² This modal independence is highlighted in a classical contribution by David Lewis collected in Braddon-Mitchell, Nola (2009, ch. 9). Let’s point out that quiddities are usually characterized as modally independent from functional roles *simpliciter*, not just from functional roles specified in physics.

⁴³ Two caveats are in order. First, my aim here is not to define quiddities via this modal condition, since any such definition would be plainly circular (including «quiddities» in its *definiens*). My goal is to clarify the notion of quiddities by stating some main claims about them (e.g. the claim they are modally independent from functional roles). Second, the idea that there are fundamental properties playing functional roles specified in physics as well as modally independent from such roles is obviously contentious. In order to vindicate this idea, positions such as dispositional essentialism must be ruled out, where dispositional essentialism is (roughly) a doctrine according to which there is no modal independence between fundamental role-players and functional roles played by them. I will discuss dispositional essentialism in §3.3.

functional duplicate but not a quiddistic duplicate of the actual one), and *RM2* just claims that they metaphysically constitute experiential properties (so that experiential properties are *NOA* quiddities – plus, eventually, some other entities). However, *RM3* remains quite nebulous instead, since it remains quite unclear why and in which sense physics is silent about quiddities. The crux of the matter here is that, if quiddities are fundamental properties playing functional roles specified in physics (e.g. mass), then physics does not seem silent about them – more precisely, physics does not seem silent about them since they can be both referred and informatively characterized via physical theories as players of certain functional roles specified by such theories. However, *RM3* does not claim that physics is completely silent about quiddities, just that it is silent about them in a certain relevant sense. Thus the main problem becomes that of spelling such a sense out, which is what I am going to do in the remaining part of this section.

In particular, my explication of *RM3* consists of two steps. First, I state the so-called Ramsey-Lewis approach to physics, a well-supported and widespread philosophical conception of physics aimed to pull its cognitive content out. Second, I show that, taking such an approach for granted, the idea that physics is silent about quiddities turns out to be both clear and well-supported. Let's start from the Ramsey-Lewis approach.

2.2.2 The Ramsey-Lewis Approach

As previously sketched, the Ramsey-Lewis approach is a philosophical conception of physics aimed to pull its cognitive content out. Now, physics is nothing but a bunch of theories, which are nothing but bunches of propositions in turn. Let's call «propositions of physics» the propositional constituents of physical theories (and, therefore, of physics itself). With such tools at hand, the Ramsey-Lewis approach can be characterized as a philosophical conception of propositions of physics aimed to pull their cognitive content out. More precisely, the Ramsey-Lewis approach consists in the application of certain paraphrasing techniques to propositions of physics in order to capture their cognitive content – that is, what such propositions tell us about their domain of discourse (arguably, fundamental unobservable entities). These techniques were originally devised by the philosopher-logician Frank Plumpton Ramsey in the Twenties⁴⁴. The idea of

⁴⁴ Ramsey (1931, 212-236).

applying them to physics in order to capture its cognitive content sprung up between the Sixties and the Seventies, thanks to Grover Maxwell and David Lewis' pivotal contributions⁴⁵.

The Ramsey-Lewis approach consists of two steps. First, for each proposition of physics P , apply the paraphrasing techniques devised by Ramsey to P in order to obtain its Ramsey-proposition $R(P)$; second, identify $R(P)$ with P 's cognitive content (viz. what P says about its domain of discourse). I will mainly focus on the first step here, since it is by far the most technical; still let's keep in mind that both of them are philosophically substantive⁴⁶. That said, before delving into details, a brief clarification is in order. The Ramsey-Lewis approach is usually applied to syntactic items: sentences and syntactically conceived theories (namely, theories conceived as bunches of sentences organized into axiomatic systems). However, my discussion has been mainly focused on semantic items so far (more precisely, it has been mainly focused on propositions and concepts). Therefore, I will slightly modify the approach in order to apply it to semantic items instead (more specifically, to propositions). As far as I can see, nothing substantive hinges on this. That said, let's turn to the first step of the Ramsey-Lewis approach: the paraphrasing step.

As sketched above, propositions of physics are nothing but propositional constituents of physical theories. Let P be one of them. P arguably involves two kinds of concepts: theoretical physical concepts (e.g. *to be an electron*, or *to have spin up*) and other concepts (mainly topic-neutral concepts such as logical, mathematical, spatial, temporal and causal ones). Let's call theoretical physical concepts involved in P «T-concepts» (where «T» stands for «theoretical») and let C_1, \dots, C_n be an exhaustive list of them. Furthermore, let's call all other concepts involved in T «O-concepts» (where «O» stands for «other»). O-concepts include logical concepts, that is concepts expressed by logical terms such as logical constants (viz. connectives and quantifiers) and logical variables (e.g. the higher-order logical variable « X », where higher-order logical variables are logical variables ranging over properties). Now, for each higher-order logical variable χ , let's call « $C(\chi)$ » the logical concept expressed by « χ » and « $C(\exists\chi)$ » the logical

⁴⁵ See Maxwell in Feigl, Maxwell (1962, ch.1), Maxwell (1970), Lewis (1970) and Lewis (1972).

⁴⁶ Indeed, identifying the cognitive content of a proposition of physics with its Ramsey-proposition is a move which can be fulfilled in many ways and can serve many philosophical purposes. On various complications involved by this second step, see Papineau (2010).

concept expressed by $\langle\exists\chi\rangle$. Furthermore, let $C(X_1), \dots, C(X_n)$ and $C(\exists X_1), \dots, C(\exists X_n)$ be two lists of logical concepts accordingly understood. With such tools at hand, for each i such that $1 \leq i \leq n$, let's substitute each occurrence of C_i in P with an occurrence of $C(X_i)$ and prefix the resulting open proposition with an occurrence of $C(\exists X_i)$. Here we are: what results is P 's Ramsey-proposition – namely, $R(P)$. Likewise for all propositions of physics – that is, for every proposition of physics P , it is possible to obtain its Ramsey-proposition $R(P)$ by applying the aforementioned technical machinery to P . At this stage, the second step of the Ramsey-Lewis approach can be easily fulfilled: it suffices to identify P 's cognitive content (that is, what P says about its domain of discourse) with $R(P)$. In other words, it suffices to embrace the idea that P tells us just that $R(P)$ is true.

Now, the Ramsey-Lewis approach is widespread as well as independently plausible. Hence I will not argue in its favour here, taking it for granted instead. In other words, I will take for granted that, for every proposition of physics P , P tells us just that $R(P)$ is true. Now, $R(P)$ is an existential proposition (viz. a proposition of the following kind: *there are such-and-such entities*) whose *such-and-such* clause specifies a certain functional condition; therefore, $R(P)$ just says that there are entities satisfying a certain functional condition. Moreover, given that satisfying a certain functional condition is nothing but playing a certain functional role, it follows that $R(P)$ just says that there are entities playing a certain functional role. Finally, given that $R(P)$ gives P 's cognitive content (i.e. what P says about its domain of discourse), it follows that P just says that there are entities playing a certain functional role in turn (more precisely, the functional role specified by the *such-and-such* clause involved in $R(P)$). In other words, taking the Ramsey-Lewis approach for granted, the following thesis turns out to be true:

Ramsey-Lewis Thesis: for every proposition of physics P , P just says that $R(P)$ is true – that is, it just says that there are entities playing a certain functional role (more precisely, the functional role specified by the *such-and-such* clause involved in $R(P)$).

That said, it suffices to combine the Ramsey-Lewis thesis with quiddities' modal independence in order to firmly grasp why and in which sense physics is silent about them, as I am going to show in the next subsection.

2.2.3 *The Silence of Physics*

In order to firmly grasp why and in which sense *RM3* is true, let's start granting the Ramsey-Lewis thesis. In other words, let's start granting that, for every proposition of physics P , P just says that $R(P)$ is true – or, equivalently, it just says that there are entities playing a certain functional role (more precisely, the functional role specified by the *such-and-such* clause involved in $R(P)$). It follows that, if P is actually true, then it is true at every functional duplicate of the actual world (viz. at every possible world with the same world-wide pattern of distribution of functional roles of the actual world). Indeed, let's suppose that P is actually true. It follows that a certain functional role (namely, the functional role specified by the *such-and-such* clause involved in $R(P)$) is played at the actual world. However, such a functional role is played at every functional duplicate of the actual world as well (since functional duplicates of the actual world have the same world-wide pattern of distributions of functional roles of the actual world). Thus P 's truth-maker occurs at every functional duplicate of the actual world – and, consequently, P is true at any such world⁴⁷. Furthermore, given quiddities' modal independence from functional roles, there is a possible world w^* which is a functional duplicate of the actual world but not a quiddistic duplicate of it (i.e. there is a possible world w^* which has the same world-wide pattern of distribution of functional roles of the actual world but a different world-wide pattern of distribution of quiddities), so that P turns out to be true at w^* even if w^* is not a quiddistic duplicate of the actual world. Here we are: physics is silent about quiddities in the sense that no true proposition of physics describes them finely enough to distinguish between the actual world and a possible world which is a functional duplicate but not a quiddistic duplicate of it – or, equivalently, it is silent about quiddities in the sense that no true proposition of physics (viz. no truth of physics) describes quiddities finely enough to be false at a possible world

⁴⁷ It is a quite uncontroversial feature of truth-making that, for every proposition X and every possible world w , if X 's truth-maker occurs at w , then X is true at w .

which is a functional duplicate but not a quiddistic duplicate of the actual one. Therefore, the third tenet of Russellian monism can be rephrased as follows:

(*RM3*) quiddities are such that no truth of physics describes them finely enough to be false at a possible world which is a functional duplicate but not a quiddistic duplicate of the actual world – or, equivalently, quiddities are such that, for every possible world w and every truth of physics T , if w is a functional duplicate of the actual world, then T is true at w (even if w is not a quiddistic duplicate of the actual world).

Moreover, this tenet turns out to be firmly established qua entailed by the conjunction of the Ramsey-Lewis approach to physics and the modal independence of quiddities, plus a bunch of independently plausible auxiliary assumptions (e.g. the assumption that *such-and-such* clauses involved in Ramsey-propositions specify functional conditions).

At this point, the sense in which physics is silent about quiddities should be clear enough: whatever quiddistic features distinguish the actual world from worlds which are functional duplicates but not quiddistic duplicates of it, physics is completely silent about them – that is, as long as physics is concerned, it is as if there were no such features at all. That said, let's finally join Russellian monism's main tenets to *IP*, in order to show how the resulting doctrine (that is, Russellian physicalism) can rebut the conceivability challenge.

2.3 Rebutting the Challenge

In this section, I finally argue for (b) – viz. the claim that, if physicalism is enriched in a Russellian way (that is, if it is stated as Russellian physicalism), then it is provided with resources to compellingly establish that *CP* is highly doubtful and, hence, arguably rejectable (where *CP* is the conceivability premise, according to which $PT \ \& \ \sim Q$ is ideally, negatively conceivable). More precisely, first of all, I introduce Russellian physicalism; then I maintain that it casts serious doubts on *CP*, eventually undermining it; and, finally, I examine an

alternative intuitions-based strategy to uphold *CP*, rebutting it as well. Let's start from Russellian physicalism.

2.3.1 Russellian Physicalism

Russellian physicalism is just the conjunction of *IP* (viz. intuitive physicalism) and Russellian monism (*RMI-RM3*)⁴⁸. Taking into account the main results achieved so far, this peculiar version of physicalism can be stated as follows:

Russellian Physicalism

(*RMI*) there are quiddities – that is, fundamental properties playing functional roles specified in physics and still modally independent from functional roles (more precisely, quiddities are modally independent from functional roles in the sense that, for some possible world w^* , w^* is a functional duplicate but not a quiddistic duplicate of the actual world);

(*RM2*) quiddities metaphysically constitute experiential properties;

(*RM3*) quiddities are such that no truth of physics describes them finely enough to be false at a possible world which is a functional duplicate but not a quiddistic duplicate of the actual world – that is, for every possible world w and every truth of physics T , if w is a functional duplicate of the actual world, then T is true at w (even if w is not a quiddistic duplicate of the actual world);

(*IP*) everything (which is not itself a basic physical entity) is *NOA* basic physical entities.

In order to spell out the metaphysical picture suggested by Russellian physicalism, let's kick off pointing out that *RMI* and *IP* jointly entail that quiddities are basic physical entities. Indeed, if *IP* is true, then everything is either a basic physical entity or it is *NOA* basic physical entities – so that, in particular, every instantiated property is either a basic physical entity or it is *NOA* basic physical entities. Furthermore, if *RMI* is true, then quiddities are actually instantiated, so that quiddities are either basic physical entities or *NOA* basic physical entities. However, qua fundamental, quiddities are not *NOA* any entities;

⁴⁸ Russellian physicalism has been endorsed by several authors, even if with slightly different nuances and formulations. Among its major supporters, let's remember at least Stoljar (2001, 2006), Pereboom (2011), McClelland (2013), Montero (2010), Montero in Alter, Nagasawa (2015, ch. 15) and Brown (2017). The label «Russellian physicalism» comes from Montero (2010).

hence, they are basic physical entities. Now, given that *RMI* and *IP* entail that quiddities are basic physical entities, they strongly suggest a metaphysical picture according to which every basic physical entity is either a quiddity or a functional role (specified in physics and played by quiddities), so that *IP* turns out to be true in the sense that everything (which is not itself a basic physical entity) is *NOA* quiddities plus functional roles (specified in physics and played by quiddities). So much for the general formulation of Russellian physicalism. However, before coming to (b) (viz. the conditional according to which, if physicalism is stated as Russellian physicalism, then it is provided with resources to compellingly establish that *CP* is highly doubtful and, hence, arguably rejectable), let's briefly pause on some further features of this view.

First, strictly speaking, the metaphysical picture suggested by *RMI* and *IP* is not that every basic physical entity is either a quiddity or a functional role (specified in physics and played by quiddities). Indeed, to begin with, at the fundamental level of reality there must be some individuals over and above properties (instantiated by such individuals) and functional roles (played by such properties)⁴⁹. Furthermore, functional roles, qua bunches of topic-neutral relations⁵⁰, are arguably constituted by such relations, thus failing to be basic physical entities (since basic physical entities, qua fundamental, should not be metaphysically constituted by any other entities). To be precise, the metaphysical picture suggested by *RMI* and *IP* holds just that every basic physical entity (which is not itself a fundamental individual) is either a quiddity or a topic-neutral relation (constituting some functional role which is specified in physics and played by quiddities), so that *IP* turns out to be true in the sense that everything (which is not itself a basic physical entity) is *NOA* fundamental individuals instantiating quiddities entertaining such topic-neutral relations. However, for the sake of simplicity, I will treat Russellian physicalism as holding that every basic physical entity is either a quiddity or a functional role (specified in physics and played by quiddities), so that *IP* is true in the sense that everything is *NOA* quiddities playing such roles. As far as I can see, nothing substantive

⁴⁹ This is not uncontroversial, since certain versions of ontic structural realism deny that there are any individuals at the fundamental level – see Ladyman (2020, §4) on this point.

⁵⁰ For functional roles as bunches of topic-neutral (viz. logical, mathematical, spatial, temporal, causal and nomic) relations, see §2.2.1.

hinges on this, since functional-roles talk can be easily replaced with topic-neutral-relations talk without harming my arguments.

Second, *RMI* and *IP* strongly suggest this metaphysical picture without entailing it, since they leave open the possibility that some basic physical entities are neither quiddities nor functional roles specified in physics and played by quiddities – in other words, they leave open the possibility that some but not all basic physical entities are either quiddities or functional roles. Still, no Russellian physicalist should take such a possibility too seriously, so that it can be easily set aside here. Indeed, first off, broadly Ockhamist considerations count against it: in a nutshell, given that at the fundamental level of reality Russellian physicalism already posits functional roles plus quiddities playing them, why should it posit some further kinds of entities? There seems to be no metaphysical work left to them. Moreover, if basic physical entities are just quiddities plus functional roles played by them, a major objection raised against Russellian physicalism loses its strength. In a nutshell, the objection is that quiddities are *ad hoc* posits, which turn out to be actually illegitimate from a physicalist perspective. Indeed, quiddities are primarily posited in order to metaphysically constitute experiential properties, and this special link with experientiality arguably deprives them of physicalist respectability⁵¹. However, if there are just quiddities plus functional roles at the fundamental level of reality, then any non-fundamental entity (not just experiential properties) is actually *NOA* quiddities playing functional roles, so that there is no special (and, therefore, no physicalistically deplorable) link between quiddities and experiential entities after all⁵².

Third, *RM2* is entailed by the metaphysical picture suggested by *RMI* and *IP*, being therefore dispensable from Russellian physicalism's basic commitments. Indeed, according to this picture, every non-fundamental entity is *NOA* quiddities (plus functional roles specified in physics and played by them). Therefore, granting that experiential properties are non-fundamental, it follows that every experiential property is *NOA* quiddities (plus functional roles specified in physics and played by them). Furthermore, by definition, x is *NOA* y_1, \dots, y_n (plus, eventually, some other entities) just in the case y_1, \dots, y_n metaphysically constitute x ; hence, according to the metaphysical picture suggested by *RMI* and *IP*,

⁵¹ See Montero (2010) and Morris (2016) on this objection.

⁵² It is not obvious that this move suffices to overcome Morris' technical formulation of the objection; for more on this point, see §3.1.3.

quiddities metaphysically constitute experiential properties. To sum up, *RM2* is entailed by the metaphysical picture suggested by *RMI* and *IP*, so that it turns out to be dispensable from Russellian physicalism's basic tenets.

Fourth and finally, it might be doubted that Russellian physicalism qualifies as genuinely physicalist, since it might be doubted that quiddities can be basic physical entities (as Russellian physicalism demands). Now, I will thoroughly discuss this problem in §3.1.1, so that some brief anticipations will suffice here. In a nutshell, I will argue that the prospects for a positive answer to the question «can quiddities be basic physical entities?» are high, since surely quiddities can be basic physical entities according to the object and the negative interpretations (of «basic physical entities») and, maybe, they can be basic physical entities according to theory interpretations as well. That said, let's finally come to my Russellian physicalist case against *CP*.

2.3.2 The Case Against the Conceivability Premise

My Russellian physicalist case against *CP* can be split into a negative and a positive part. The negative part aims to establish that, if Russellian physicalism is true, then there are no good reasons to believe that *CP* is true. Indeed, if Russellian physicalism is true, then the main argument for *CP* (viz. the conceptual truths argument) is plausibly undercut, since its first premise turns out to be utterly unwarranted. The positive part aims to establish that, if Russellian physicalism is true, then there are good reasons to not believe that *CP* is true. Indeed, if Russellian physicalism is true, then *PT* (and, *a fortiori*, *PT* & $\sim Q$) involves concepts such that we are massively ignorant about their nature (namely, quiddistic concepts), and we should not believe conceivability claims involving such concepts.

As far as the negative part is concerned, let's kick off recalling the main argument for *CP*:

Conceptual Truths Argument

(P1) there are no disputed conceptual truths;

(P2) if there are no disputed conceptual truths, then *CP* is true;

(C) *CP* is true.

The crucial premise here is *PI*, and the important point is that *PI* is utterly unwarranted if Russellian physicalism is true, since the main arguments in its favour turn out to be flawed in such a case. In order to show this fact, I will proceed in two steps. First, I will argue that, if Russellian physicalism is true, then *PT* is not a truth of physics (so that the physics-based account of basic physical truths turns out to be wrong). Second, I will argue that, if *PT* is not a truth of physics, then both the physics argument and the structure and dynamics argument are flawed – more precisely, the physics argument is unsound qua involving false premises, and the structure and dynamics argument is dialectically weak qua involving unsupported premises.

Let's start showing that, if Russellian physicalism is true, then *PT* is not a truth of physics. To begin with, let's suppose that Russellian physicalism is true – that is, let's suppose that *RMI*, *RM3* and *IP* are true. Since *RMI* is true, it follows that there is a possible world w^* which is a functional duplicate but not a quiddistic duplicate of the actual world. Furthermore, since *IP* is also true, it follows that quiddities are basic physical entities⁵³, so that every possible world which is not a quiddistic duplicate of the actual world is not a basic physical duplicate of it – and, in particular, w^* is not a basic physical duplicate of the actual world. Finally, since *RM3* is true, it follows that, for every possible world w and every truth of physics T , if w is a functional duplicate of the actual world, then T is true at w (even if w is not a quiddistic duplicate of the actual world). Joining all these facts, it follows that there is a possible world w^* such that, for every truth of physics T , T is true at w^* , even if w^* is not a basic physical duplicate of the actual world. Now, let's suppose that *PT* is a truth of physics. It follows that *PT* is true at w^* . However, this cannot be the case, since *PT* (qua complete basic physical truth) is true at a possible world only if such a world is a basic physical duplicate of the actual world⁵⁴, and w^* is not a basic physical duplicate of the actual world. To recap, if Russellian physicalism is true and *PT* is a truth of physics, then *PT* is true at a possible world (viz. w^*) which is not a basic physical duplicate of the actual one; still, this cannot be the case; therefore, either Russellian physicalism is

⁵³ Indeed, as argued in §2.3.1, that quiddities are basic physical entities is entailed by the conjunction of *RMI* and *IP*.

⁵⁴ In fact, *PT* is just the description of a generic minimal basic physical duplicate of the actual world. It follows that, for every possible world w , if *PT* is true at w , then w is a minimal basic physical duplicate of the actual world – and, hence, a basic physical duplicate of it.

not true or PT is not a truth of physics – or, equivalently, if Russellian physicalism is true, then PT is not a truth of physics⁵⁵.

At this stage, let's establish that, if PT is not a truth of physics, then the physics argument is unsound qua involving false premises. The reasoning here is extremely clear-cut. According to the third premise of the physics argument, all basic physical truths are truths of physics. However, if PT is not a truth of physics, then not all basic physical truths are truths of physics – since PT is (by definition) a basic physical truth (more precisely, it is the complete basic physical truth). Let's turn now to the structure and dynamics argument.

Here the point is to establish that, if PT is not a truth of physics, then the structure and dynamics argument is dialectically weak qua involving unsupported premises. In this case, all revolves around the first premise of the argument, holding that all basic physical truths are structural truths. The support for such a premise comes almost entirely from structural realism in philosophy of physics («structural realism» for short), an independently plausible doctrine endorsed by several great physicists across the last two centuries (e.g. Poincaré and Eddington)⁵⁶ as well as by most realist philosophers of physics nowadays⁵⁷. In a nutshell, structural realism holds that physics tells us about the structure of

⁵⁵ Indeed, $\sim p \vee \sim q$ is logically equivalent to $p \supset \sim q$.

⁵⁶ The case of Poincaré is quite controversial; still it is worth mentioning, since John Worall hugely relies on it in his Worall (1989), a seminal paper marking the rebirth of structural realism in contemporary philosophy of physics. For an instructive overview on structural realism historical background, see Van Fraassen (2006).

⁵⁷ On structural realism as the standard position in philosophy of physics nowadays, see Chakravartty (2007, 34), Beni (2017, 1) and Ladyman (2019, incipit). Despite its popularity, structural realism has several problems. The most serious probably are the Newman objection and the disputable character of the structure-nature distinction. Let's briefly sketch them. The Newman objection is a counterargument stated by the mathematician Max Newman against Russell's version of structural realism – see Newman (1928). It is a technical objection and it can be stated as follows: if (as structural realism maintains) physics characterizes its subject matter just as exemplifying a certain structure, then any sufficiently large set of entities should be able to make its propositions true, since structures are such that any sufficiently large set of entities should be able to exemplify them; still, surely certain sets of entities are unable to make propositions of physics true, even if such sets are sufficiently large (for instance, no sufficiently large set of abstract entities is able to make propositions of physics true); therefore, structural realism is false. The objection depends on a certain logico-mathematical reading of the notion of structure, since the claim that structures are such that any sufficiently large set of entities should be able to exemplify them is plausible only according to this reading. For a thoroughgoing discussion of the objection as well as several structuralist rejoinders, see Ainsworth (2009). The second major shortcoming of structural realism concerns the structure-nature distinction instead. Here the point is that it is extremely difficult to spell this distinction out in such a way to make it both clear and tenable, so that it seems quite disputable to build a philosophical doctrine on its shoulders. This objection is more philosophical, since it hinges on the nuanced character of notions such as that of structure and that of nature. For some critical evaluation of the structure-nature distinction in this context, see Psillos (1995, 31-32) and Frigg, Votsis (2011, 257-258).

fundamental unobservable phenomena, but not about their nature⁵⁸. Granting that basic representational constituents of physics are (what I previously called) propositions of physics, structural realism can be rephrased as a doctrine about true proposition of physics – more precisely, it can be rephrased as holding that all truths of physics are structural truths. Now, this structuralist key insight is usually taken to support the first premise of the structure and dynamics argument, since it entails such a premise insofar as basic physical truths are truths of physics. Indeed, if basic physical truths are truths of physics and truths of physics are structural truths (as structural realism holds), then obviously basic physical truths are structural truths. However, this train of thought obviously requires that basic physical truths are truths of physics, and this is not the case if Russellian physicalism is true. In fact, as previously argued, if Russellian physicalism is true, then *PT* is not a truth of physics and (by definition) *PT* is a basic physical truth. In other words, if Russellian physicalism is true, then the main line of thought in favour of the first premise of the structure and dynamics argument is undercut, so that such a premise turns out to be unsupported – or, more briefly, if Russellian physicalism is true, then the structure and dynamics argument is dialectically weak *qua* involving unsupported premises.

So much for the conceptual truths argument. Let's now come to the positive part of the Russellian physicalist case against *CP*. Here the point is that, if Russellian physicalism is true, then in order to state the complete truth about quiddities, *PT* must involve concepts characterizing them finely enough to not be satisfied at possible worlds which are functional duplicates but not quiddistic duplicates (and, *a fortiori*, not basic physical duplicates) of the actual world – viz. quiddistic concepts⁵⁹. Now, we are massively ignorant about quiddistic concepts: we do not know (not even approximately) which kinds of concepts they are and, most importantly, we do not know which logical relations they entertain with

⁵⁸ As Ladyman (2019, §3) puts it, «structural realism is often characterized as the view that scientific theories tell us only about the form or structure of the unobservable world and not about its nature». The label «structural realism» has been introduced by Grover Maxwell in Lakatos, Musgrave (1968, 155).

⁵⁹ According to David Chalmers, «a *quiddistic concept*... [is] one that picks out the property [viz. the relevant quiddity] not by its [functional] role but by its intrinsic character», Chalmers (2012, 350). It is not entirely clear what the intrinsic character of a property should be. However, I do not need to settle this issue here. Indeed, for my purposes, the important point is just that quiddistic concepts do not pick out their referents via their functional roles, so that such concepts can be satisfied at the actual world and unsatisfied at a possible world which is a functional duplicate (but not a quiddistic duplicate) of it.

experiential concepts. Furthermore, this massive ignorance gives us substantial reasons to not believe that CP is true. Indeed, we should neither believe nor disbelieve conceivability claims involving as objects of conceivability propositions constituted by concepts such that we are massively ignorant about their nature – that is, we should neither believe nor disbelieve conceivability claims involving as objects of conceivability propositions constituted by concepts such that we do not know (not even approximately) which kinds of concepts they are and, especially, which logical relations they entertain with other concepts⁶⁰. Still, if Russellian physicalism is true, then CP is one of these propositions, since it involves as object of conceivability a proposition (viz. $PT \ \& \ \sim Q$) which is constituted by concepts (viz. quiddistic concepts) such that we are massively ignorant about their nature. Consequently, if Russellian physicalism is true, then we should neither believe nor disbelieve CP ⁶¹.

To conclude, if Russellian physicalism is true, then CP is highly doubtful and, hence, arguably rejectable, since:

- the main argument in its favour (i.e. the conceptual truths argument) turns

⁶⁰ Why should we neither believe nor disbelieve this kind of conceivability claims? The answer is simply that, since conceivability claims such as *X is ideally, negatively conceivable* essentially rely on logical relations between concepts constituting *X*, we should know (at least approximately) how these concepts are logically related in order to be able to evaluate such claims.

⁶¹ The following counterargument could be mounted against Russellian physicalism: $PT \ \& \ \sim Q$ is comprehensible; Russellian physicalism entails that $PT \ \& \ \sim Q$ is not comprehensible; therefore, Russellian physicalism is false. Here the crucial point is what «comprehensible» exactly means. Two readings are available: either it means comprehensible by us, current human beings (with our current, limited conceptual repertoire), or it means comprehensible by future, ideal rational agents (mastering any concepts involved in PT). However, no disambiguation vindicates both premises of the counterargument. Indeed, if the former reading is endorsed, then $PT \ \& \ \sim Q$ is not comprehensible, since PT turns out to involve concepts that we do not currently master (quite independently from Russellian physicalism and quiddistic concepts, it is very plausible that, in order to state the complete basic physical truth, currently ignored primitive concepts are needed). On the other hand, if the latter reading is endorsed, then Russellian physicalism does not entail that $PT \ \& \ \sim Q$ is not comprehensible: it just entails that ideal cognitive agents (mastering any concepts involved in PT) could derive a contradiction from $PT \ \& \ \sim Q$ using only logical principles and conceptual truths – to make an analogy, in this case $PT \ \& \ \sim Q$ would be comprehensible by future, ideal rational agents (mastering any concepts involved in PT) in the same sense in which ordinary analytic falsehoods such as *this table is completely blue and completely red* are comprehensible by us, current human beings. It might be objected that analytic falsehoods are not actually comprehensible by any cognitive agent whatsoever, even if they seem to be so – in other words, it might be objected that cognitive agents undergo comprehensibility illusions as far as analytic falsehoods are concerned. However, even in this case the counterargument would fail. Indeed, given that $PT \ \& \ \sim Q$ is an analytic falsehood according to Russellian physicalism, it turns out that, if analytic falsehoods are not actually comprehensible (even if they seem to be so), then $PT \ \& \ \sim Q$ is not actually comprehensible (even if it seems to be so), so that the first premise of the counterargument is false anyway.

out to be utterly unconvincing, so that there are no good reasons to believe that *CP* is true;

- *CP* involves concepts about which we are massively ignorant (i.e. quiddistic concepts) and we should not believe conceivability claims involving this kind of concepts, so that there are good reasons to not believe that *CP* is true.

This arguably concludes the first part of my Russellian physicalist case against *ZA* – that is, this arguably concludes my case for (b). However, before moving on, I have to neutralize a possible loophole to save zombies’ conceivability.

2.3.3 *Zombies and Intuitions*

The line of thought pursued in this chapter seemingly conceals a lethal flaw. Indeed, it hugely relies on the idea that arguments are needed in order to grant that *CP* is true⁶². However, it might be objected that no argument is actually needed. More precisely, it might be suggested that we should grant that *CP* is true just because our intuitions push us in this direction. This is the intuitions-based defense of *CP*.

Now, let’s assume that intuitions are just intellectual seemings, that is mental states in which a proposition seems true – in other words, let’s assume that our having intuitions according to which *X* simply amounts to *X*’s seeming true to us⁶³. Granting this basic characterization, there seems to be two main ways to spell out the intuitions-based defense of *CP*. It might be either argued that we have intuitions according to which *PT & ~Q* is metaphysically possible (viz. it seems to us that it is compatible with the natures of basic physical entities and experiential entities that the former occur without the latter), that such intuitions are reliable and that they ultimately amount to *PT & ~Q*’s being conceivable in the technical sense required by *CP*, so that *CP* turns out to be true; or, more directly, it might be argued that we have intuitions according to which *CP* is true

⁶² Let’s point out that my Russellian physicalist case against *CP* does not entirely rely on the idea that arguments are needed in order to grant that *CP* is true. Indeed, while the negative part of the case actually relies on such an idea, the positive part is quite independent from it, relying just on the fact that *CP* involves quiddistic concepts.

⁶³ The nature of intuitions is widely debated; for an instructive overview, see Pust (2019, §1). However, there is no need to go into detail for my purposes, so that I can be happy with this rough (yet widely shared) basic characterization.

(viz. it seems to us that $PT \ \& \ \sim Q$ is ideally, negatively conceivable) and that such intuitions are reliable, so that CP turns out to be true again. I find both strategies ultimately unconvincing, for the following reasons.

First off, the reliability of intuitions in philosophy is quite disputable. Indeed, as several philosophers strenuously argued in the last decades, philosophical claims (such as CP) should not be mainly based on intuitions, since intuitions *per se* do not guarantee any epistemic respectability (especially insofar as their objects are highly theoretical and speculative propositions, such as philosophical ones). In other words, the sheer fact that X seems true to us is not a good reason to believe that X is actually true – especially insofar as X is very theoretical and speculative. This reply is very general, being totally unrelated to present issues⁶⁴. It is very controversial as well, since other philosophers vigorously defended the epistemic significance of intuitions in philosophy⁶⁵. However, it is not crucial in this context. In fact, there are far better reasons to downplay the importance of intuitions as far as physicalism, conceivability and the metaphysics of mind are concerned, even granting their significance elsewhere in philosophy.

To begin with, intuitions are especially doubtful as far as matters of fundamental metaphysics are concerned. Indeed, as Gregg Rosenberg rightfully observed,

science has already shown us in many ways – from the relativity, responsiveness and surprising geometry of space and time to the randomness, indeterminacy, nonlocality and uncertainty principle of quantum mechanics – that commonsense intuition breaks down at the fundamental level of the world.⁶⁶

Therefore, given that $PT \ \& \ \sim Q$ is (at least partly) a matter of fundamental metaphysics (since PT is the complete basic physical truth and, hence, the complete fundamental truth from a physicalist perspective), we should not trust our intuitions about propositions involving $PT \ \& \ \sim Q$ (e.g. CP) – or, in other words, our intuitions about CP should not be taken as reliable.

⁶⁴ For a thoroughgoing critical appraisal of intuitions in philosophical methodology, see Cappelen (2012).

⁶⁵ Intuitions are praised by rationalists mostly – see, for instance, Bealer in Depaul, Ramsey (1998, 201-240).

⁶⁶ Rosenberg (2004, 241).

Moreover (and more importantly), if Russellian physicalism is true, then PT actually involves quiddistic concepts, so that both $PT \ \& \ \sim Q$ and CP involve such concepts as well. Still, quiddistic concepts are such that we are massively ignorant about their nature: we do not currently master them and, furthermore, we have extremely poor ideas about which kinds of concepts they are and which logical relations they entertain with other concepts. We just know that they characterize quiddities in such a way to not be satisfied at possible worlds which are functional duplicates but not quiddistic duplicates of the actual one. However, as already observed, it is advisable to not trust intuitions about propositions constituted by concepts about which we are ignorant in such a massive way; and, therefore, it is advisable to not trust our intuitions about CP – or, in other words, our intuitions about CP should not be taken as reliable⁶⁷.

Finally, even granting that our intuitions about CP or $PT \ \& \ \sim Q$ are reliable, the aforementioned ways to spell out the intuitions-based defense of CP still depend on very disputable ideas. To be precise, the first way to spell it out depends on the idea that our having intuitions according to which $PT \ \& \ \sim Q$ is metaphysically possible ultimately amounts to $PT \ \& \ \sim Q$ being ideally, negatively conceivable; however, this is far from clear once the notion of ideal, negative conceivability is exactly characterized (viz. once it is characterized as impossibility to derive any contradiction even after ideal rational reflection using only logical principles and conceptual truths). Indeed, it is far from clear (at least to me) that the fact that it seems to us that it is compatible with the natures of basic physical entities and experiential ones that the former occur without the latter is tantamount to the fact that a normal human being would not be able, even after ideal rational reflection, to derive a contradiction from $PT \ \& \ \sim Q$ using only logical principles or conceptual truths. Moving to the second way to spell out the intuitions-based defense, it depends on the idea that we have intuitions according to which CP is true. However, this again is far from clear once we keep in mind that CP involves concepts (viz. quiddistic ones) about which we are massively ignorant. Indeed, as just argued, it is far from clear (at least to me) that we have intuitions about

⁶⁷ The idea that we should not trust intuitions about propositions involving concepts about which we are massively ignorant can be arguably traced back to the fact that, according to many accounts of intuitions, the reliability of our intuitions about a certain propositions X heavily hinges on our mastery of X 's conceptual constituents – so that, if we do not master X 's conceptual constituents, then it is likely that we do not have reliable intuitions about X .

propositions involving concepts that are not mastered by us and about which we are massively ignorant.

To conclude, the intuitions-based defense of *CP* is unsuccessful if Russellian physicalism is true. Therefore, if Russellian physicalism is granted, then *CP* turns out to be undercut contrary intuitions notwithstanding.

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Chapter 3

Russellian Physicalism

To begin with, let's remember some key ideas addressed in previous chapters:

- *Intuitive Physicalism (IP)*: the claim that everything is nothing over and above (viz. *NOA*) basic physical entities;
- *Minimal Physical Duplicate Thesis (MPD)*: the claim that every minimal basic physical duplicate of the actual world is an experiential duplicate of it;
- *Zombie Worlds*: worlds which are minimal basic physical duplicates of the actual world but not experiential duplicates of it, since no experiential property is instantiated at them;
- *Zombie Argument (ZA)*: the argument according to which there is a metaphysically possible zombie world, since a proposition describing it (viz. $PT \ \& \ \sim Q$) is conceivable in a certain technical sense, and whatever is conceivable in such a sense is metaphysically possible as well;
- *Quiddities*: fundamental properties playing functional roles specified in physics and modally independent from such roles;
- *Russellian monism*: the doctrine according to which (*RM1*) there are quiddities (viz. quidditism); (*RM2*) quiddities metaphysically constitute experiential properties; and (*RM3*) physics is silent (in a certain relevant sense) about quiddities – more precisely, physics is silent about quiddities in the sense that, for every possible world w and every truth of physics T , if w is a functional duplicate of the actual world, then T is true at w (even if w is not a quiddistic duplicate of the actual world);
- *Russellian physicalism*: the conjunction of physicalism (*IP*) and Russellian monism (*RM1-RM3*).

In chapter 1, I clarified *IP*. Moreover, I stated both the general schema of anti-physicalist conceivability arguments and a particular exemplification of it (namely, *ZA*), stressing that such arguments threaten *IP* no matter how it is exactly understood. Indeed, no matter how *IP* is exactly understood, it entails *MPD*; still, *MPD* is undercut by conceivability arguments such as *ZA* (if they are sound), so that *IP* turns out to be threatened by such arguments in turn. Later on, in chapter 2, I introduced my Russellian physicalist strategy to defend *IP* from *ZA* (and from other conceivability arguments as well). It consists of two steps:

- (a) physicalism should be enriched in a Russellian way – that is, it should be stated as Russellian physicalism;
- (b) if physicalism is enriched in a Russellian way, then it is provided with resources to rebut *ZA* – indeed, Russellian physicalism is provided with resources to compellingly establish that *ZA*'s first premise is highly doubtful and, hence, arguably rejectable.

Furthermore, I argued for (b), hopefully establishing it. It follows that, in order to fulfill my Russellian physicalist case against *ZA* (and other conceivability arguments as well), it suffices to establish (a) – that is, it suffices to establish that physicalism should be enriched in a Russellian way.

Now, the idea that physicalism should be enriched in a Russellian way can be rephrased as a claim about which theses physicalists should endorse (over and above *IP*). More precisely, it can be rephrased as the claim that physicalists should endorse Russellian monism (over and above *IP*), which is what I mostly aim to establish in this chapter. More precisely, the chapter splits into three sections. The first one deals with the preliminary question of the compatibility between *IP* and Russellian monism, and maintains that they are actually compatible. This compatibility result is crucial; indeed, if *IP* and Russellian monism were incompatible, the very idea that physicalists should endorse Russellian monism (over and above *IP*) would be utterly misconceived. The second section maintains that physicalists should endorse Russellian monism – that is, it argues for (a). Here the point is simply that Russellian monism (especially in its physicalist version) is highly plausible (since there is a convincing argument in its favour and just unpersuasive objections against it), so

that physicalists should endorse it. Finally, the third section is devoted to a defense of quiddities. Indeed, as observed in §2.2.1, Russellian monism hugely relies on such items, since all its tenets crucially revolve around them. However, quiddities are rather controversial, so that I decided to reserve the last section to their defense. That said, let's start from the compatibility problem.

3.1 The Compatibility Problem

In this section, I maintain that *IP* and Russellian monism are actually compatible. The section is structured as follows. In the first subsection, I argue that *IP* and Russellian monism are at least *prima facie* compatible. Indeed, Russellian monism can be easily developed in a physicalist way; therefore, it is likely that the doctrine in itself does not conflict with physicalism (more precisely, with *IP*). In the second subsection, I strengthen this compatibility claim, turning to the major argument in favour of *IP*: the causal closure argument. More precisely, I hold that this argument does not rule Russellian monism out, so that physicalists can endorse Russellian monism without undercutting the main motivation for their doctrine. Finally, in the third subsection, I critically examine some major counterarguments. In particular, I state and criticize some lines of reasoning according to which, despite contrary appearances, Russellian monism must be developed in panpsychist or panprotopsychist ways (roughly, in such a way to imbue fundamental entities with experientiality or some physicalistically objectionable kind of protoexperientiality), thus turning out to be essentially anti-physicalist. That said, let's start highlighting the *prima facie* compatibility between *IP* and Russellian monism.

3.1.1 Prima Facie Compatibility

IP and Russellian monism seem at least *prima facie* compatible, granting that quiddities can be basic physical entities. Indeed, in the event that quiddities are basic physical entities, it turns out that the only items posited by Russellian monism (i.e. quiddities themselves) are basic physical entities, so that Russellian monism does not transgress the physicalist *dictum* according to which everything is either a basic or a derivative physical entity – or, equivalently, it does not

collide with physicalism's key tenet *IP*¹. Hence, the main question here is: can quiddities be basic physical entities? As far as I can see, they can according to several (if not all) interpretations of «basic physical entities».

To begin with, they surely can according to the object interpretation of «basic physical entities». Indeed, according to this interpretation, «basic physical entities» just means entities required by a complete account of the intrinsic nature of common sense macroscopic, inorganic objects and their constituents, and nothing prevents quiddities from being entities of this kind as far as I can see. More precisely, the point is that the object interpretation places no metaphysical constraint on the nature of basic physical entities, so that it is arguably compatible with almost any account of them (included the Russellian physicalist account according to which they are quiddities). Furthermore, quiddities can be basic physical entities according to the negative interpretation as well. In fact, if such an interpretation is correct, then «basic physical entities» just means fundamental non-mental entities, and nothing prevents quiddities from being entities of this kind as far as I can see. Indeed, quiddities are usually defined as fundamental properties playing functional roles specified in physics and modally independent from such roles; it follows that nothing prevents them from being fundamental (quite the opposite, they are fundamental by definition) and, furthermore, nothing prevents them from being non-mental – since nothing forces fundamental properties playing functional roles specified in physics and modally independent from such roles to be mental². Finally, if some theory interpretation of «basic physical entities» is correct, it is more controversial that quiddities can be basic physical entities. Now, according to such interpretations, «basic physical entities» means entities posited by physics. Hence, the key issue here can be stated as follows: can quiddities be entities posited by physics?

Prima facie, it is not so difficult to make intelligible the idea that quiddities are entities posited by physics. Indeed, as previously observed³, according to one of the main semantic accounts of terms involved in physics (e.g. «mass»), such terms refer to certain role-players – e.g. «mass» refers to whatever plays a certain

¹ As observed at the beginning of chapter 1, *IP* and the claim that everything is either a basic or a derivative physical entity are equivalent.

² There are arguments according to which quiddities must be mental. However, they are unconvincing – see §3.1.3 for a critical examination of them.

³ See ch. 2, footnote 41.

role specified in physics: the mass-role. However, quiddities are identical to such role-players by definition, since quiddities are defined as properties playing functional roles specified in physics (that is, roles such as the mass-role). Therefore, it suffices to endorse the aforementioned semantic account in order to vindicate the idea that quiddities are identical to properties picked out by terms such as «mass» – and, consequently, identical to entities posited by physics (since «mass» arguably refers to a theoretical entity posited by physics). The immediate reply is that quiddities cannot be entities posited by physics, since it should be possible to capture the complete truth about entities posited by physics via truths of physics, whereas the complete truth about quiddities cannot be captured via truths of physics. Now, I grant that the complete truth about quiddities cannot be captured via truths of physics – since, as argued in §2.3.2, the complete truth about quiddities (*viz.* *PT*) is not a truth of physics. However, I deny that truths of physics should be able to capture the complete truth about physics' posits, since there is plenty of scientific disciplines not satisfying this kind of requirement. For instance, abstract sciences such as arithmetic surely do not satisfy it, given that (as established by Gödel's first incompleteness theorem) it is provably impossible to capture the complete truth about entities posited by arithmetic (namely, natural numbers) just via truths of arithmetic⁴. Or again, special sciences such as biology arguably do not satisfy it either, given that it is impossible to capture the complete truth about entities posited by biology (e.g. genes) just via truths of biology – in order to capture the complete truth about such entities, other kinds of truths are needed as well (e.g. truths of chemistry and truths of physics)⁵. Admittedly, it looks strange that the complete truth about fundamental entities (such as quiddities) cannot be captured by the science of fundamental entities (i.e. physics). However, comparatively speaking, this situation is not so strange after

⁴ In other words, the epistemic pessimism about physics involved by the idea that quiddities are entities posited by physics is not worse than that the epistemic pessimism about arithmetic dictated by limitative results such as Gödel's first incompleteness theorem. It follows that, insofar as the latter kind of pessimism has no skeptical or destructive consequences for arithmetic, the former should not have any such consequences for physics. See Gundersen (2015) on this analogy.

⁵ Gregg Rosenberg developed a general model explaining why natural sciences (physics included) are unable to completely characterize their posits. The key idea is that each science characterizes its posits exclusively in functional terms, even if such posits must have some non-functional, intrinsic nature as well. See Rosenberg (2004) for a detailed formulation and Coleman in Skrbina (2009, 90-93) for a useful reconstruction. Both Rosenberg and Coleman draw a panpsychist moral from the model; however, I believe that Rosenberg's key insights can be appreciated even eschewing panpsychism.

all, given that similar ones characterize many and varied disciplines, from arithmetic to biology. As just said, the complete truth about natural numbers cannot be captured by the science of natural numbers (i.e. arithmetic), just like the complete truth about living organisms cannot be captured by the science of living organisms (i.e. biology). Why should be less acceptable that the complete truth about fundamental entities (such as quiddities) cannot be captured by the science of fundamental entities (that is, by physics)?

Now, it might obviously turn out that the semantics of physical terms according to which they refer to certain role-players is wrong, or that physics is atypical in being able to capture the complete truth about its posits. Still, given that these issues are far from settled, the idea that quiddities cannot be basic physical entities if theory interpretations are true remains highly objectionable at best, and this is all I need in order to bolster my compatibility result.

To sum up, *IP* and Russellian monism seem at least *prima facie* compatible, since Russellian monism can be easily developed in a physicalist way by enriching it with the idea that quiddities are basic physical entities. Furthermore, such a *prima facie* compatibility is robust across various solutions to the physicality problem (that is, various interpretations of «basic physical entities»), since surely quiddities can be basic physical entities according to the object and the negative interpretation – and, probably, they can be basic physical entities according to theory interpretations as well. That said, let's turn to the main argument in favour of physicalism, in order to scrutinize its relation with Russellian monism.

3.1.2 *The Causal Closure Argument: A Russellian Appraisal*

The causal closure argument is the most influential argument in favour of *IP*⁶. Indeed, the rise of physicalism in contemporary analytic philosophy is mostly attributable to the fact that such an argument became available in the second half

⁶ There are other physicalist arguments. However, they are somewhat minor. The most notable probably is the argument from methodological naturalism. It can be stated as follows: it is rational to be guided in one's ontological commitments by the methods of natural science; the ontology that one is led to by such methods is physicalism (viz. *IP*); therefore, it is rational to believe that *IP* is true. See Stoljar (2017, §17) on this argument.

of the twentieth century⁷. Before examining it, two caveats are in order. First, the argument is often stated relying on an ontology of events. The reason is that it hinges on certain claims about causal relations, and causal *relata* are arguably events⁸. Therefore, the argument aims to establish an event version of *IP* – that is, it aims to establish that every event is a physical event, where «physical event» means either basic or derivative physical event (and a basic physical event is a physical event which is not *NOA* other events, whereas a derivative physical event is a physical event which is *NOA* basic physical events)⁹. Second, the argument is often stated in a domain specific way, focusing just on experiential events. In this standard version, the argument aims to establish that every experiential event is a physical event, where «physical event» involves the aforementioned ambiguity. In other words, it aims to establish an event version of what I called «experiential physicalism» (*EP* for short) in chapter 1. Still this is not crucial at all, since the causal closure argument can be restated with minor changes for each physicalistically problematic domain of causally efficacious events. That said, this notorious argument can be stated as follows¹⁰:

⁷ This point has been famously established by David Papineau in his contribution to Gillett, Loewer (2001, ch. 1). More precisely, according to Papineau, the causal closure argument became available just in the second half of the twentieth century since its first premise (*viz.* the causal closure principle) became well-supported just in such a period – due both to certain developments concerning conservation principles in theoretical physics and, most importantly, to the increasing amount of physiological evidence against causal gaps in physiological chains connecting brain phenomena with bodily movements.

⁸ There actually are many alternative hypotheses about the nature of causal *relata* – e.g. causal *relata* as tropes, facts, states of affairs, etc.. For a useful survey, see Schaffer (2016, §1).

⁹ Two accounts of events are usually contrasted in debates about physicalism and mind: a Kimian account, according to which an event is an ordered triple constituted by an *ennadic* property *F*, an *n*-tuple of individuals instantiating *F* and a time of instantiation *t*; and a Davidsonian account, according to which an event is an unstructured particular – see Kim (1993) and Davidson (1980), respectively. As far as the causal closure argument is concerned, Kimian events are usually preferred, since the identity of Kimian events entails the identity of properties constituting them (e.g. given two Kimian events $e = \langle F, i, t \rangle$ and $e^* = \langle G, j, t' \rangle$, $e = e^*$ entails $F = G$). It follows that, stating the argument in terms of Kimian events, it is possible to conclude not just that every event is a physical event, but also that every property is a physical property – a more interesting conclusion in this context, given that both physicalists and anti-physicalists are usually concerned with the metaphysical status of allegedly non-physical (e.g. experiential) properties. Furthermore, quite independently from the causal closure argument, it is not recommendable to state physicalism as a claim quantifying on Davidsonian event, since such a claim seems compatible with property dualism (*viz.* it seems possible that every Davidsonian event is a physical event even if some mental properties are not physical properties), whereas physicalism should not.

¹⁰ For similar expositions of the causal closure argument and the involved principle of causal closure, see Spurret and Papineau (1999), Papineau in Gillett, Loewer (2001, ch. 1), Melnyk (2003) and Kim (2005).

Causal Closure Argument

(P1) if a physical event has a cause, then it has a sufficient physical cause (viz. causal closure of the physical)¹¹;

(P2) experiential events cause physical events (viz. denial of experiential epiphenomenalism);

(P3) if an event e has a sufficient cause e^* , then e^* excludes any other putative cause of e – unless e is overdetermined (viz. exclusion principle)¹²;

(C) experiential events are physical events (viz. the event version of *EP* is true).

It is not obvious that the conclusion follows. In order to see why it does, let e_1 be an experiential event. By *P2*, for some physical event e_2 , e_1 causes e_2 . Furthermore, by *P1*, e_2 has a sufficient physical cause e_3 . Therefore, the physical event e_2 has both an experiential cause e_1 and a sufficient physical cause e_3 . Moreover, granting that e_2 is not overdetermined, by *P3* it follows that e_3 excludes any other putative cause of e_2 – that is, by *P3* it follows that e_2 has no cause numerically distinct from e_3 . Hence, given that e_1 causes e_2 , it follows that $e_1 = e_3$ ¹³. Now, the causal closure argument is valid, even if its soundness is somewhat doubtful, since all its premises have been heavily contested¹⁴. However, here I do not aim to establish its soundness. My aim is just to establish that, even if sound, it does not rule Russellian monism out. Therefore, let's focus on this latter issue.

¹¹ The causal closure principle has several non-equivalent formulations – Gibb (2015) lists nine of them. See Montero in Walter, Heckman (2003, ch. 8), Vicente (2006) and Jones (2008) for some critical surveys.

¹² See Kim (2005) and Robb, Heil (2019, §6) on the exclusion principle and related issues.

¹³ Let's spot that, to be exact, the experiential version of the causal closure argument does not establish that every experiential event is a physical event, but just the weaker claim that every experiential event which is not overdetermined is a physical event. However, once this latter claim is established, it looks difficult to not embrace the stronger conclusion that every experiential event is a physical event. Indeed, in order to eschew such a conclusion, it would be necessary to hold either that experiential events are systematically overdetermined, or that, even if certain experiential events (viz. non-overdetermined ones) are physical, others (viz. overdetermined ones) are not. Still, both loopholes seem quite unlikely.

¹⁴ Several authors recently criticized the causal closure principle – see Garcia (2014), Gibb (2015), and Dimitrijevic (2020). Moreover, both experiential epiphenomenalism and systematic overdetermination of experiential events (which renders *P3* useless) have been defended as well – the former has been defended by Chalmers (1996) and Jackson (1998), the latter by Mills (1996). By the way, I believe that the causal closure argument is convincing and that it constitutes the main reason backing physicalism up. Still, given that I am taking a physicalist outlook for granted, I prefer to avoid any detailed defense of the argument here.

At a first glance, it is not clear why the causal closure argument should clash with Russellian monism. In order to see why it does, let's kick off by distinguishing four possible versions of Russellian monism¹⁵:

- panpsychist Russellian monism, according to which quiddities are experiential properties (i.e. properties such that there is something it is like to instantiate them). This first version of Russellian monism is a close relative of panpsychism, a metaphysical doctrine according to which some fundamental and ubiquitous properties are experiential¹⁶;
- panprotopsychist Russellian monism, according to which quiddities are protoexperiential properties (i.e. properties which are not experiential, but which are metaphysically linked to experiential ones in some special and tight way). This second version of Russellian monism is a close relative of panprotopsychism, a metaphysical doctrine according to which some fundamental and ubiquitous properties are protoexperiential¹⁷;
- neutral Russellian monism, according to which quiddities are neutral properties (i.e. properties which are neither physical nor mental). This third version of Russellian monism is a close relative of Russell's neutral monism, a doctrine according to which fundamental entities are neutral, and both physical and mental entities are constituted by such neutral items

¹⁵ For this fourfold classification, see Alter, Nagasawa (2015, 432-436).

¹⁶ See Griffin (1998), Rosenberg (2004) and Strawson (2006) for some classical formulations of panpsychist Russellian monism; furthermore, see Goff, Seager, Hallen-Hermanson (2017, §2.1) and Skrbina (2005, ch. 1) on panpsychism's definition. Let's note that I am equating panpsychism with panexperientialism – that is, I am equating panpsychism with the claim that some fundamental and ubiquitous properties are experiential, whereas it should be equated just with the weaker claim that some fundamental and ubiquitous properties are mental. The equation is by no means mandatory, given that panexperientialism entails panpsychism (since being an experiential property entails being a mental one) but not vice versa (since being a mental property does not entail being an experiential one). However, the equation is widely accepted in this context, so that I feel entitled to assume it here.

¹⁷ Panprotopsychist Russellian monism has been originally stated (yet not endorsed) by David Chalmers – see Chalmers (2002, 265). It is usually defined by analogy with panpsychism, just substituting experientiality with protoexperientiality. Its most important recent supporter probably is Sam Coleman – see Coleman (2012) and Coleman (2014). Furthermore, let's spot that, following Chalmers, protoexperiential properties are often characterized in a weaker way, that is as properties which are not experiential but jointly constitute experiential ones. Still I reject this characterization. In fact, protoexperiential properties should be physicalistically problematic, but they are not physicalistically problematic at all if so characterized – in fact, all non-eliminativist physicalists accept without qualms that some non-experiential properties jointly constitute experiential ones.

differently arranged¹⁸;

- physicalist Russellian monism, according to which quiddities are physical properties (basic physical properties, to be exact). This fourth and final version of Russellian monism is obviously a close relative of physicalism – more precisely, it is roughly equivalent to what I previously called «Russellian physicalism».

Furthermore, let's grant that only physicalist Russellian monism vindicates quiddities' physicality, whereas other versions of the doctrine are anti-physicalist – since they deny that quiddities are physical properties and, therefore, that events constituted by instantiations of quiddities (let's call them «quiddistic events») are physical events. At this point, a clash with the causal closure argument readily pops out, given that it is quite easy to mount a version of the argument targeted to quiddistic events and establishing that they are physical events: it suffices to take the standard experiential version of the argument and substitute occurrences of «experiential events» with occurrences of «quiddistic events». Hence, to sum up, the causal closure argument seems to refute Russellian monism insofar as most versions of Russellian monism (more precisely, three versions out of four) deny that quiddistic events are physical events, whereas a quiddistic version of the argument establishes this claim.

Russellian monists usually deal with this problem by arguing that the exclusion principle should not be paraphrased as I did – viz. as the claim that, in general, any non-overdetermined event has no cause numerically distinct from whatever cause is sufficient to produce it. According to them, the principle should be paraphrased in a weaker way – more precisely, as the claim that, in general, any non-overdetermined event has no cause which is not metaphysically tied (in some sufficiently strict way) to whatever cause is sufficient to produce it. The idea is that non-overdetermined events can have numerically distinct causes, insofar as such causes are metaphysically tied in a sufficiently strict way – for instance, insofar as one cause supervenes on the other¹⁹. Consequently, the

¹⁸ See Russell (1914) and Russell in Russell (1917, 97-124) on neutral monism's original formulation; furthermore, see Stubenberg (2018) for a general survey. Neutral monism is not very widespread nowadays; however, see Westphal (2016) for a thoroughgoing contemporary defense.

¹⁹ As Robert Howell nicely puts it, «[m]any philosophers respond to the.. [causal closure] argument by maintaining that some relations between mental and physical states are so tight that mental and physical causes do not compete... and Russellian monism offers a novel version of this strategy».

conclusion of the experiential version of the argument becomes that experiential events are metaphysically tied to physical events in some sufficiently strict way, whereas the conclusion of the quiddistic version of the argument becomes that quiddistic events are metaphysically tied to physical events in some sufficiently strict way. However, this conclusion does not conflict at all with anti-physicalist versions of Russellian monism (i.e. panpsychist Russellian monism, panprotopsychist Russellian monism and neutral Russellian monism). Contrariwise, it is perfectly consonant with their picture of the situation. In fact, as previously explained, quiddities are characterized by Russellian monists as either identical to physical properties (e.g. mass) or bearing some very strict metaphysical relation to them²⁰. It follows that quiddistic events turn out to be either identical with physical events or bearing some very strict metaphysical relation to them. In both cases, there is a strict metaphysical tie between quiddistic events and physical events, and such a tie seems not just compatible with anti-physicalist versions of Russellian monism, but even demanded by them.

Given this way to deal with the causal closure argument, the first physicalist reply that immediately comes to mind is that the anti-physicalist (e.g. panpsychist) Russellian monist has conceded too much to physicalism – more precisely, he has conceded so much to capitulate to the idea that quiddistic events are physical events. Indeed, if (as the revised version of the causal closure argument concludes) quiddistic events are metaphysically tied to physical events in some very strict way, then arguably quiddistic events are (e.g.) supervenient on physical events; still, supervenience is a plausible *analysans* of being *NOA*; therefore, quiddistic events are *NOA* physical events – and, consequently, they turn out to be physical in turn²¹. However, this reply is unconvincing, since the

Howell (2015, 27).

²⁰ In chapter 2, I characterized the strict metaphysical relation holding between standard physical properties such as mass and quiddities as either an identity relation or a role/role-player relation. These alternatives are not exhaustive at all – for instance, some Russellian monists characterize this relation as a grounding relation holding between dispositions and their categorical grounds. However, such details are not crucial for my purposes. What is crucial here is just that all Russellian monists grant that there is a very strict metaphysical relation between quiddities and physical properties such as mass.

²¹ Two clarifications are in order. First, analogous physicalist replies can be stated using other *analysans* of being *NOA* instead of supervenience – e.g. it might be argued that, if quiddistic events are metaphysically tied to physical events in some sufficiently strict way, then arguably quiddistic events are metaphysically grounded in physical events; still, metaphysical grounding is a plausible *analysans* of being *NOA*; therefore, quiddistic events are *NOA* physical events – and, consequently, they turn out to be physical in turn. Second, even if supervenience is not a relation between events, it is legitimate to speak about supervenience between classes of events, granted

revised version of the causal closure argument allows to establish that there is some strict metaphysical dependence between quiddistic events and physical events without settling the direction of dependence at all. In other words, the revised version of the argument is compatible both with the claim that quiddistic events are metaphysically dependent (in some sufficiently strict way) on physical events and with the claim that physical events are metaphysically dependent (in some sufficiently strict way) on quiddistic events – and, clearly, while the former claim leads to the physicalist conclusion that quiddistic events are physical, the latter (which would be plausibly preferred by any anti-physicalist Russellian monist) does not.

That said, this Russellian way to deal with the causal closure argument remains quite objectionable as far as I can see. Indeed, first off, the Russellian rephrasing of *P3* might be resisted by holding that we should stick to the interpretation involving numerical identity, so that the Russellian loophole disappears. And, second, it might be argued that the Russellian strategy actually entails a subtle kind of experiential epiphenomenalism, thus turning out to be ultimately unacceptable. In particular, Robert Howell convincingly argued that, if we grant the causal closure of the physical, the Russellian account of the relations between quiddities and properties metaphysically tied to them (that is, functional roles studied by physics as well as standard experiential properties such as pain), and the idea that quiddities are experiential or protoexperiential, it follows that standard experiential events such as pain occurrences are epiphenomenal²².

Now, I am quite sympathetic toward these criticisms. However, I also believe that they are somewhat beside the point from a physicalist perspective. Indeed, the alleged clash between the causal closure argument and Russellian monism hinges on the fact that, whereas a quiddistic version of the former establishes that quiddistic events are physical events, most versions of the latter deny this claim. Hence the clash is easily avoidable, since there is a version of Russellian monism granting that quiddistic events are physical events: physicalist Russellian monism. In other words, the causal closure argument does not refute Russellian monism *simpliciter* since it does not refute all its versions (in particular, it does not refute physicalist Russellian monism). Furthermore, the aforementioned criticisms

that these supervenience claims can be rephrased as concerning those properties constituting such events.

²² Details concerning the argument are quite complex – see Howell (2015) for them.

against the Russellian strategy to deal with the causal closure argument turn out to be innocuous from the perspective of physicalist Russellian monism. Indeed, first off, even if the exclusion principle is stated in terms of numerical identity, it does not follow that the causal closure argument refutes Russellian monism – since the conclusion of the argument (namely, the claim that quiddistic events are physical events) remains compatible with some version of Russellian monism (viz. physicalist Russellian monism); and, furthermore, even if the idea that quiddities are experiential or protoexperiential (joined to the causal closure principle and to the Russellian account of the relations between quiddities and properties metaphysically tied to them) entails experiential epiphenomenalism, it does not follow that all varieties of Russellian monism entail experiential epiphenomenalism, since at least one version of it (that is, physicalist Russellian monism) rejects the claim that quiddities are experiential or protoexperiential.

To sum up, both this subsection and the previous one substantially hinge on the idea that Russellian monism can be developed in a physicalist way. Indeed, I defended two claims so far. First, *IP* and Russellian monism are *prima facie* compatible, since Russellian monism can be easily developed in a physicalist way – more precisely, it suffices to grant the plausible hypothesis that quiddities can be basic physical entities in order to make room for a physicalist version of the doctrine (viz. physicalist Russellian monism). Second, the causal closure argument does not rule Russellian monism out, since Russellian monism can be developed in a physicalist way – more precisely, here the point is that the causal closure argument does not refute physicalist Russellian monism and, therefore, it does not refute Russellian monism *simpliciter*. However, there are some arguments according to which Russellian monism should not be developed in a physicalist way, but in panpsychist or panprotopsychist ways instead – namely, it should be developed as panpsychist Russellian monism or panprotopsychist Russellian monism, not as physicalist Russellian monism. Let's call them «pan(proto)psychist Russellian arguments». In order to finalize my case for the compatibility between *IP* and Russellian monism, such arguments must be undercut. Hence, let's turn to them.

3.1.3 Pan(proto)psychist Russellian Arguments

Pan(proto)psychist Russellian arguments hold that quiddities are experiential or protoexperiential, so that Russellian monism should be developed in panpsychist or panprotopsychist ways. There are three such arguments in the literature: a metaphysical argument, an epistemic argument and a modal argument. In this context, they are problematic for at least two reasons. First, as already observed, they risk to undercut my case for the compatibility between *IP* and Russellian monism. Second, they can be used to mount a case in general for the incompatibility between *IP* and Russellian monism. Hence, in this subsection, first off I try to undercut these arguments; secondly, I maintain that, even if they are granted, it is quite difficult to mount a case for the incompatibility between *IP* and Russellian monism based on them.

The first pan(proto)psychist Russellian argument is the metaphysical argument. In a nutshell, it holds that quiddities are experiential since they are intrinsic or categorical in some special way, and only experiential properties are intrinsic or categorical in such a way²³. It is quite difficult to evaluate this argument, since the appropriate notions of intrinsicity and categoricity are hard to find. Intrinsic properties are usually contrasted with extrinsic ones, where the former can be defined as properties which things have in virtue of the way they themselves are (e.g. being spherical), while the latter can be defined as properties which things have in virtue of their relations or lack of relations with other things (e.g. being married)²⁴. Categorical properties are usually contrasted with dispositional ones instead, where the former can be defined as properties which things have independently from what they tend to do in various circumstances (e.g. being spherical), while the latter can be defined as properties characterizing which effects an entity tends to produce in certain circumstances (e.g. being soluble)²⁵.

²³ See Strawson (2008, ch. 1-2) and Coleman in Skrbina (2009, ch. 4) on the metaphysical argument.

²⁴ The *locus classicus* of this characterization is Lewis (1986, 61). For a general overview, see Marshall, Weatherson (2018).

²⁵ For a general overview, see Choi, Fara (2018). Let's spot that the contrast between dispositions and their categorical bases is not utterly uncontroversial, since some philosophers argued that dispositions are actually identical to their categorical bases – see, for instance, Armstrong in Armstrong, Martin and Place (1996, ch. 1). However, the standard position is that dispositions are distinct from their categorical bases. There are several arguments supporting this distinction thesis. For instance, it might be plausibly maintained that a disposition *D* has distinct categorical bases *C*₁ and *C*₂ in different occasions, so that it cannot be the case that *D* is identical to its

Now, it is quite clear that the proponents of the metaphysical argument do not have such usual notions of intrinsicity and categoricity in mind when they hold that only experiential properties are intrinsic or categorical. In fact, it is rather uncontroversial that not only experiential properties satisfy such notions – being spherical satisfies them without being experiential. However, even strengthening such usual notions in order to rule counterexamples out, it is doubtful that any substantial improvement can be achieved. For instance, let's suppose that the notion of intrinsicity appealed in the metaphysical argument is that of absolute intrinsicity – where, roughly, an absolutely intrinsic property is an intrinsic property which is not *NOA* extrinsic ones²⁶. Even in this case, it remains very doubtful that only experiential properties are absolutely intrinsic. Indeed, to begin with, nothing in the notion of absolute intrinsicity seems to entail experientiality, since several coherent notions of absolutely intrinsic non-experiential properties have been conjured up throughout the history of philosophy²⁷. Furthermore, it is doubtful that only experiential properties are absolutely intrinsic, since paradigmatic experiential properties do not seem absolutely intrinsic at all. In fact, especially from a physicalist perspective, it seems likely that paradigmatic experiential properties (such as pain) are constituted by extrinsic neurological properties (*viz.* properties that neurons have in virtue of their relations or lack of relations with each other), thus failing to be absolutely intrinsic²⁸. However, if paradigmatic experiential properties are not

categorical base, since this would entail that $C_1 = C_2$, even if (by hypothesis) $C_1 \neq C_2$. For instance, fragility seems to be a disposition which sometimes has the property of having an irregular molecular structure as its categorical base and other times has the distinct property of having weak intermolecular bondings as its categorical base, so that it cannot be the case that that fragility is identical to its categorical base – since this would entail that having an irregular molecular structure and having weak intermolecular bondings are the same property.

²⁶ More precisely, F is an absolutely intrinsic property of x just in the case it is an intrinsic property of x and, for no collection of extrinsic properties G_1, \dots, G_n instantiated by x 's proper parts, F is *NOA* G_1, \dots, G_n . See Pereboom (2011, ch. 5) on the notion of absolutely intrinsic property. Let's spot that Pereboom uses the notion of reduction instead of that of being *NOA* in his characterization of absolutely intrinsic properties. However, what is crucial here is just that absolutely intrinsic properties are not metaphysically constituted by extrinsic ones, not how the notion of metaphysical constitution is exactly spelt out.

²⁷ Derk Pereboom mentions Aristotelian prime materiality and Lockean solidity as plausible candidates – see Pereboom (2011). For a contrary opinion, see Coleman in Skrbina (2009, ch. 4), where Coleman argues that the notion of intrinsicity employed in this debate involves that of experientiality, since the concept of intrinsic (in the relevant sense) but not experiential is incoherent.

²⁸ *Mutatis mutandis*, we might define a notion of absolute categoricity as follows: F is an absolutely categorical property of x just in the case it is a categorical property of x and it is such that, for no collection of dispositional properties G_1, \dots, G_n instantiated by x 's proper parts, F is *NOA* G_1, \dots, G_n . Even in this case, it is quite doubtful that only experiential properties are absolutely

absolutely intrinsic, why should we believe that other (ill-defined) experiential properties are so? It has also been argued that, no matter how such special notions of intrinsicity or categoricity are exactly characterized, only experiential properties satisfy them, since we derive such special concepts of intrinsicity or categoricity from (our cognitive engagement with) experiential properties. Still, even granting this latter claim, this argument remains quite unpersuasive, since the fact that we derive a certain concept *C* from (our cognitive engagement with) *Xs* is a very poor reason to believe that only *Xs* satisfy *C*²⁹. So much for the metaphysical argument. Let's move now to the next one.

The epistemic argument holds that quiddities are experiential since we know, just by enjoying our experiences, that fundamental properties metaphysically constituting them are experiential; still, quiddities are just fundamental properties metaphysically constituting (our) experiences; therefore, at least some quiddities (i.e. those metaphysically constituting our experiences) are experiential. Moreover, it would be unsatisfactory to hold that quiddities constituting our experiences are experiential whereas others are not. Indeed, according to Russellian monists, quiddities constituting our experiences are just those quiddities constituting (certain parts of) our bodies – more precisely, those quiddities constituting our nervous systems. However, there is nothing special about such quiddities. More precisely, in general, it seems very likely that relatively simple entities³⁰ constituting our bodies do not have a different nature from entities of the same kind constituting mere inorganic objects – for instance,

categorical. Indeed, first off, nothing in the notion of absolute categoricity seems to entail experientiality; and, second, it is quite doubtful that paradigmatic experiential properties (such as pain) are absolutely categorical at all. In fact, especially from a physicalist perspective, it seems likely that paradigmatic experiential properties (such as pain) are constituted by dispositional neurological properties (viz. properties characterizing which effects neurons tend to produce in certain circumstances), thus failing to be absolutely categorical. For a contrary opinion (according to which paradigmatic experiential properties are not constituted by dispositional neurological ones), see Kriegel (2009).

²⁹ As Kripke rightly observed, «I could learn the word 'blue' if someone points to a particular band of the rainbow... [still, t]here is no reason to conclude that I must, therefore, be unable to apply color terminology to [blue] books», Kripke (1982, 116). In terms of concepts, the point is that, even if I derive the concept *blue* from (my cognitive engagement with) certain items (i.e. blue bands of the rainbow), it does not follow that only items of this kind satisfy *blue*. Analogously, even if I derive the concept *absolute intrinsicity* from (my cognitive engagement with) certain items (i.e. experiential properties), it does not follow that only items of this kind satisfy *absolute intrinsicity*.

³⁰ Following Wilson (2006, 62), by «relatively simple entities» I mean entities existing at relatively low levels of constitutional complexity (e.g. individuals such as micro-particles, or properties such as having spin up). The contrast is with relatively complex entities, which exist at relatively high levels of constitutional complexity instead (e.g. individuals such as tables, or properties such as being wise).

it seems very likely that carbon atoms constituting our bodies do not have a different nature from carbon atoms constituting diamonds. Therefore, given that quiddities are simple entities constituting our bodies, it seems very likely that quiddities constituting our bodies do not have a different nature from those constituting mere inorganic objects – which in turn entails that, granting that the former are experiential, the latter should be experiential too³¹.

Now, even granting that all quiddities are metaphysically on a par (viz. all experiential or all non-experiential), the main problem here is that it is rather objectionable that we know, just by enjoying our experiences, that fundamental properties metaphysically constituting them are experiential. This claim is usually backed up via so-called revelation principles, that is principles according to which the fundamental nature of experiential entities is substantially revealed to us just by enjoying our experiences³². However, such principles are highly suspect, especially from a physicalist perspective, since countless anti-physicalist arguments can be easily built upon them³³. It follows that, from a Russellian physicalist perspective (that is, the perspective that I wish to endorse), the epistemic argument is quite unpersuasive qua hanging on highly suspect claims.

Finally, the modal argument holds that quiddities are protoexperiential since their existence entails that there are certain possible worlds (i.e. quiddistically swapped worlds) and the existence of such worlds imbues quiddities with protoexperientiality in turn³⁴. This argument is more technical, so let's pause on it

³¹ See Strawson (2008) and Goff (2017) on the epistemic argument.

³² Revelation principles are widely discussed in Goff (2017). Two caveats are in order. First, let's note that I am equating the fundamental nature of x with the nature of x 's fundamental metaphysical constituents – so that the fundamental nature of x is experiential just in the case x 's fundamental metaphysical constituents are experiential. Second, Goff usually states revelation principles as principles according to which we know the essential nature (not the fundamental nature) of our experiences just by enjoying them. However, a revelation principle of this kind entails that we know the fundamental nature of our experiences just by enjoying them, plausibly assuming that the fact that our experiences have such-and-such a fundamental nature is among their essential features.

³³ In general, granting revelation principles, the following anti-physicalist argumentative schema becomes readily available: we know, just by enjoying our experiences, that fundamental entities constituting them are F ; basic physical entities (if there are any) are not F ; therefore, fundamental entities constituting our experiences are not basic physical entities – and, consequently, our experiences are not *NOA* basic physical entities (viz. *IP* is false).

³⁴ See Morris (2016) on the modal argument. To be exact, Morris does not claim that the existence of quiddistically swapped world is entailed by that of quiddities. He treats the existence of quiddities and that of quiddistically swapped worlds as independent premises and argue for the conditional that, if both are granted, then quiddities are protoexperiential. I modified his argument in the main text, since I believe that it is so threatening exactly because the existence of quiddistically swapped worlds seems entailed by that of quiddities, so that no one committed to the latter can reject the former. However, this modification is not so important, since my reply

a little bit longer. In order to appreciate it, let's kick off remembering that quiddities (by definition) are modally independent from functional roles, so that their existence entails that there is a possible world w which is a functional duplicate but not a quiddistic duplicate of the actual world. More precisely, we might characterize w as a quiddistically swapped world: a world at which actual quiddities are systematically swapped with uninstantiated, merely possible ones, even if the functional structure exemplified by them remains fixed³⁵. Now, w does not seem to be an experiential duplicate of the actual world – indeed, since quiddities (according to Russellian monism at least) metaphysically constitute experiential entities and w wildly differs from the actual world as far as quiddities are concerned, it seems that w should differ from the actual world as far as experiential entities are concerned too. Therefore, the existence of quiddities seems to entail that some possible world w is a functional duplicate of the actual world without being either an experiential duplicate or a quiddistic duplicate of it. However, if such a world exists, then quiddities are metaphysically linked to experiential entities in a very special and tight way – since it is metaphysically possible to drastically change the distribution of quiddities without altering anything except experiences. Furthermore, properties linked to experiential ones in such a special and tight way are protoexperiential, so that quiddities turn out to be protoexperiential in turn. To sum up, if there are quiddities, then there are quiddistically swapped worlds; but if there are such worlds, then quiddities are protoexperiential; hence quiddities (if there are any) are protoexperiential.

My reply is twofold. First off, it is doubtful that w is not an experiential duplicate of the actual world, since it is doubtful that, changing quiddities (e.g. swapping actual quiddities with merely possible ones), macro-entities such as experiences would change in turn. Indeed, if quiddities are just fundamental properties instantiated at the micro-level, and experiential entities are just functional entities occurring at the macro-level, then it should be possible to change the former without changing the latter (since, due to the multiple realizability of functional phenomena, they should be realizable by different sets of low-level entities, provided that the overall functional organization remains

does not hinge on it.

³⁵ It would be equally satisfying to characterize w as a quiddistically inverted world – that is, a world at which, for some couple of actually instantiated quiddities Q (playing the functional role R) and Q' (playing the functional role R'), Q plays R' (instead of R) and Q' plays R (instead of R').

fixed). Furthermore, even granting that w is not an experiential duplicate of the actual world, there is no reason to believe that w duplicates the actual world in every respect except quiddistic and experiential ones, especially from a Russellian physicalist perspective (that is, the perspective that I wish to endorse). Indeed, according to Russellian physicalism, quiddities metaphysically constitute all non-fundamental entities, not just experiential ones. Therefore, if it is plausible that, swapping quiddities, experiential entities drastically change, it should be equally plausible that, swapping quiddities again, non-experiential non-fundamental entities (such as tables and mountains) drastically change as well – even if their changes have nothing to do with matters of functional organization and, therefore, they could be undetectable via truths of physics (since, as argued in chapter 2, truths of physics are just functional truths)³⁶.

I hopefully undercut pan(proto)psychist Russellian arguments, so that my case for the compatibility between *IP* and Russellian monism stands untouched as far as I can see. However, before closing this subsection, it remains to establish that, even if such arguments are granted, it is quite hard to mount in general a case for the incompatibility between *IP* and Russellian monism based on them. To begin with, let's explain why such arguments seem to show that *IP* and Russellian monism are incompatible. Granting pan(proto)psychist Russellian arguments, it turns out that quiddities are experiential or protoexperiential. Still, if *IP* is true, then no fundamental entity is experiential or protoexperiential – since, if *IP* is true, then all fundamental entities are basic physical entities³⁷, and basic physical entities arguably are neither experiential nor protoexperiential. Hence, to sum up, granting pan(proto)psychist Russellian arguments, it turns out that, if *IP* is true, then there are no quiddities and, therefore, Russellian monism is false – or, in other words, it turns out that *IP* is true only if Russellian monism is false (and vice versa).

This line of thought can be resisted by denying that basic physical entities are neither experiential nor protoexperiential. More precisely, this denial can be

³⁶ For a reply along these lines, see Brown (2017). More precisely, according to Brown, all non-fundamental properties have quiddistic aspects; hence, changing quiddities, such quiddistic aspects should change in turn – so that both non-fundamental properties and their world-wide patterns of distribution should change as well.

³⁷ Indeed, if *IP* is true, then everything is either a basic or a derivative physical entity; however, surely fundamental entities are not derivative physical entities – since fundamental entities are not *NOA* any entities, whereas derivative physical entities are *NOA* basic physical ones; hence, if *IP* is true, then every fundamental entity is a basic physical one.

fulfilled in two ways. First, it is possible to redefine «basic physical entities» in such a way to enhance the plausibility of the idea that some basic physical entities are experiential or protoexperiential³⁸. For instance, it is possible to endorse the object interpretation of «basic physical entities» and point out that, according to such an interpretation, it is not so unlikely that basic physical entities are experiential or protoexperiential, since nothing prevents entities required by a complete account of the intrinsic nature of common sense macroscopic, inorganic objects and their constituents from being experiential or protoexperiential³⁹. Second, it is possible to redefine «protoexperiential entities» in such a way to enhance the plausibility of the idea that some basic physical entities are protoexperiential. For instance, it is possible to defend a qualityvist account of protoexperiential properties – namely, an account according to which protoexperiential properties are just qualities involved in experiences (e.g. redness) or primitive versions of such qualities (e.g. proto-redness) – and point out that, according to such an account, it is not so unlikely that basic physical properties are protoexperiential⁴⁰. Indeed, qualities seem not (full-blooded) mental entities⁴¹, so that nothing prevents them from being basic physical entities according to the negative interpretation (over and above the object interpretation itself).

Now, I am not very persuaded by these lines of thought. Indeed, to begin with, I believe that our intuitions according to which *IP* and panpsychism are incompatible are so strong that the fact that the object interpretation vindicates

³⁸ Doctrines toying with the idea that physical entities are experiential strongly resemble former phenomenalist theories such as Brentano's. Now, I am not a Brentano's scholar; however, it seems to me that there is a substantial difference between former phenomenalist theories and contemporary versions of Russellian monism (such as panpsychist Russellian monism). In a nutshell, the difference is that, according to phenomenism, all fundamental entities are experiential, so that non-fundamental entities have a completely experiential fundamental nature (their being is exhausted by their experiential being); contrariwise, panpsychist Russellian monism leaves open the possibility that there are both experiential and non-experiential fundamental entities (for instance, a panpsychist Russellian monist might maintain that both quiddities and spatiotemporal relations specified in physics are fundamental entities, and that the former are experiential whereas the latter are not), so that non-fundamental entities might have a fundamental nature which is not completely experiential, but mixed (viz. both experiential and non-experiential).

³⁹ Galen Strawson tried to vindicate the compatibility between physicalism and panpsychism by appealing to the object interpretation – see Strawson (2008, ch. 1-2).

⁴⁰ See Coleman (2012, 2014) and Coleman in Brüntrup, Jaskolla (2016, ch. 10) on qualityvist accounts of protoexperiential properties.

⁴¹ It is very controversial whether properties such as redness are mental or not. Here the point is just that the idea that they are not has a certain plausibility, so that it might be profitably used by panqualityists in order to vindicate the compatibility between physicalism and panprotopsyism.

their compatibility should be deemed as a *reductio* of the interpretation itself⁴². Furthermore, I am not sure at all that qualities are non-mental items – and, therefore, that they might turn out to be basic physical entities according to the negative interpretation. Nevertheless, I mentioned these lines of thought in order to show that, even if pan(proto)psychist Russellian arguments are granted, it remains quite hard to mount in general a case for the incompatibility between *IP* and Russellian monism based on them.

To sum up, *IP* and Russellian monism are arguably compatible, since Russellian monism can be easily developed in a physicalist way. Furthermore, this *prima facie* compatibility is reinforced by two facts: first, the main argument for *IP* (viz. the causal closure argument) does not rule Russellian monism out; and, second, pan(proto)psychist Russellian arguments (that is, those arguments according to which Russellian monism should be developed in panpsychist or panprotopsychoist ways) are ultimately unpersuasive. Now, let's turn to Russellian monism itself, in order to show that it is not just an open possibility, but a highly recommended one.

3.2 *The Case for Russellian Monism*

In a nutshell, Russellian monism is the view that there are quiddities which metaphysically constitute experiential entities (as well as other non-fundamental items) and are such that physics is silent (in the sense specified by *RM3*) about them. In this section, I state and defend the main argument for Russellian monism (viz. the comparative argument) and rebut a bunch of anti-Russellian objections. Since my aim is to persuade physicalists to endorse Russellian monism, I will take physicalism's key commitment (viz. *IP*) for granted; furthermore, whenever possible, I will develop both arguments in favour of Russellian monism and replies to anti-Russellian objections in a physicalist fashion. Finally, I will momentarily overlook issues stemming from quidditism. Indeed, given that quidditism is very controversial, I prefer to postpone its discussion to the next section (entirely devoted to this topic). That said, this section is structured as follows.

⁴² On this line of thought, see Montero (1999, 185-186).

In the first subsection, I state and defend the main argument in favour of Russellian monism (i.e. the so-called comparative argument, according to which we should endorse Russellian monism since it is comparatively superior to non-Russellian alternatives in philosophy of mind), whereas in remaining subsections I critically examine some major objections against it. More precisely, in the second subsection, I address global objections, that is objections targeting all varieties of Russellian monism. They include the usefulness objection (according to which we should reject Russellian monism since it does not improve our dialectic predicament insofar physicalism and the metaphysics of mind are concerned), the ignorance objection (according to which we should reject Russellian monism since it attributes an unacceptable kind of ignorance to us), and the conceivability objection (according to which we should reject Russellian monism since it succumbs to conceivability arguments analogous to those threatening *IP*). Finally, in the third subsection, I address local objections, that is objections targeting specific varieties of Russellian monism – panpsychist and panprotopsychoist varieties mostly. They include the aforementioned causal objection (according to which we should reject Russellian monism since it entails a subtle kind of experiential epiphenomenalism), the weirdness objection (according to which we should reject Russellian monism since it is too weird, that is strange and counterintuitive), and the combination objection (according to which we should reject Russellian monism since it engenders the so-called combination problem, and such a problem is intractable).

That said, before moving to the comparative argument, two caveats are in order. First, there is another oft-mentioned argument in favour of Russellian monism. It is the so-called “solving two problems at once” argument, according to which we should endorse Russellian monism since it solves two long-standing and apparently unrelated philosophical problems at once. These problems are the mind-body problem (roughly, the problem of placing mental entities in the natural world) and the problem of the metaphysical bases of scientific phenomena (roughly, the problem of finding those entities on which entities studied by natural sciences metaphysically depend – given that, by their very nature, entities studied by natural sciences must metaphysically depend on something else⁴³). The

⁴³ For instance, it might be argued that natural sciences deal exclusively with dispositional properties, and that such properties, by their very nature, must metaphysically depend on more fundamental, categorical ones.

idea is that Russellian monism can solve both these problems at once just by positing quiddities – indeed, quiddities work both as fundamental constituents of experiential entities (thus placing them in the natural world) and as metaphysical bases for properties studied by natural sciences (thus accounting for their status of metaphysically dependent entities). Now, I grant that this line of thought might partially explain why Russellian monism is fascinating. However, I deny that it constitutes a good argument in its favour, since the sheer fact that two apparently unrelated mysteries can be solved by a single hypothesis hardly constitutes a good argument in favour of the hypothesis. Just to make an analogy, the sheer fact that (some of) the mysteries of quantum mechanics and (some of) the mysteries of consciousness can be solved at once via the hypothesis that quantum phenomena involving neuronal micro-tubules are the physical underpinning of consciousness (viz. the so-called quantum mind hypothesis) hardly constitutes a good argument in favour of the hypothesis itself⁴⁴. The second caveat is that, at a first glance, it might seem that the dialectical status of Russellian monism is quite unpromising, since there is just one argument in its favour and six objections against it. However, first off, a theory cannot be evaluated by counting arguments for and against it, since it is necessary to take the quality of each argument into account (and bear in mind that one good argument can dialectically overcome many bad ones). Furthermore, it is somewhat unfair to present the comparative argument as a single argument in favour of Russellian monism. Indeed, it is more like a collection of lines of thoughts, jointly showing that Russellian monism uniquely enjoys a remarkable bunch of strengths. That said, let's finally move to the comparative argument.

3.2.1 The Comparative Argument

The comparative argument holds that we should endorse Russellian monism since it is comparatively superior to non-Russellian alternatives in philosophy of mind, that is non-Russellian physicalism (in this subsection, let's call it just «physicalism») and dualism – more precisely, since it retains their main virtues yet avoiding their main vices⁴⁵. Let's start from vices – indeed, I already discussed related issues earlier, so that a brief recap will suffice here.

⁴⁴ The quantum mind hypothesis has been advanced by Roger Penrose and Stuart Hameroff – see, for instance, Penrose (1989). It has been strongly criticized – see, for instance, Koch, Hepp (2006).

⁴⁵ See Alter and Nagasawa in Alter, Nagasawa (2015, 442-444) on this argument.

The main vice of physicalism is that it is threatened by powerful conceivability arguments (e.g. *ZA*)⁴⁶. However, as shown in chapter 2, *ZA* (as well as other conceivability arguments) can be undercut from a Russellian monist (more precisely, a Russellian physicalist) perspective, so that Russellian monism arguably avoids this vice⁴⁷. Turning to dualism, its main vice is that it is threatened by the causal closure argument. However, as shown in §3.1.2, the causal closure argument does not rule Russellian monism out (in particular, it does not rule Russellian physicalism out), so that Russellian monism avoids this vice as well. Let's now turn to physicalism and dualism's main virtues, in order to show that Russellian monism arguably shares them.

The main virtues of physicalism are ontological parsimony and scientific respectability. Physicalism is ontologically parsimonious qua monist – that is, since it posits just one kind of fundamental entities (viz. basic physical entities)

⁴⁶ Powerful anti-physicalist arguments include Frank Jackson's knowledge argument too – see Jackson (1982) for its original formulation and Nida-Rümelin, O'Conaill (2019) for a useful overview. The knowledge argument is based on Mary's thought experiment (briefly mentioned in §2.2.1 in order to characterize phenomenal concepts). In a nutshell, Mary is an imaginary color scientist who spent her whole life in a black-and-white room, acquiring complete scientific knowledge of human color vision via lessons transmitted on a black-and-white television. At some point, she leaves the room, runs into a red item and learns what it is like to see red. This entails that, when she was in the room, she did not know what it is like to see red. However, when she was in the room, she knew all physical facts (both basic and derivative ones) concerning human color vision (qua equipped with complete scientific knowledge of human color vision). Therefore, what it is like to see red is not a physical fact (viz. it is neither a basic nor a derivative physical fact) concerning human color vision, and a fact version of *IP* is consequently false – that is, it is false that every fact (which is not itself a basic physical fact) is *NOA* basic physical facts. I ignored the knowledge argument so far, since the relation between physicalism and conceivability arguments is an extremely complex topic on its own, so that I preferred to set related issues aside as much as possible. However, this is not a decisive shortcoming of my view, since physicalist strategies to deal with conceivability arguments are usually applicable to the knowledge argument and vice versa, so that my Russellian physicalist strategy can be hopefully applied to the knowledge argument as well. In particular, I can reply to the knowledge argument by denying that complete scientific knowledge of human color vision ensures knowledge of all physical facts concerning human color vision. Indeed, according to Russellian physicalism, there are physical facts (involving quiddities and concerning human color vision) that cannot be disclosed by any scientific knowledge. However, if complete scientific knowledge of human color vision does not ensure knowledge of all physical facts concerning human color vision, then Mary can learn a new fact after she leaves the room even if this fact is physical – and, therefore, does not falsify physicalism. By the way, this reply does not require that Mary would know no fact involving quiddities inside the black-and-white room. Indeed, according to Russellian physicalism, quiddities are involved in many functional facts which would be surely disclosed by the complete scientific knowledge at Mary's disposal inside the room. In other words, according to Russellian physicalism, complete scientific knowledge would reveal to Mary many (but not all) physical facts involving quiddities.

⁴⁷ As mentioned in the incipit of this section, conceivability arguments akin to those mounted against *IP* can be mounted against Russellian monism (and, in particular, against Russellian physicalism) as well. I will discuss these arguments in §3.2.3, maintaining that they can be rebutted along the same lines followed in chapter 2 to rebut standard anti-physicalist conceivability arguments.

and holds that all non-fundamental entities are *NOA* basic physical ones⁴⁸. Furthermore, it is scientifically respectable since its ontology is easily embeddable into the so-called scientific worldview – i.e. that layered model of reality according to which high-level entities treated by special sciences (chemical entities, biological entities, social entities, etc.) are *NOA* (complex systems of) entities treated by physics (e.g. micro-particles such as electrons, or theoretical properties such as mass)⁴⁹. It is likely that Russellian monism retains such virtues. Indeed, to begin with, it can be easily developed in a monist way, turning out to be as parsimonious as physicalism⁵⁰. Now, several versions of Russellian monism fulfill its monist ambitions in different ways. Here I confine myself to the following, Russellian physicalist way: everything is *NOA* quiddities plus functional roles played by them (since every fundamental entity is either a quiddity or a functional role played by some quiddity); however, both quiddities and functional roles played by them are basic physical entities (since both are fundamental, non-mental entities, and «basic physical entities» just means fundamental, non-mental entities)⁵¹; therefore, everything is *NOA* a single kind of

⁴⁸ It is not utterly uncontroversial that physicalism is a monist ontology. Indeed, as Barbara Montero rightly observed, physicalism looks compatible with the existence of several irreducible kinds of fundamental entities (e.g. several irreducible kinds of micro-particles) – and, therefore, it seems compatible with ontological pluralism. See Montero in Alter, Nagasawa (2015, 216).

⁴⁹ The *locus classicus* of the layered model of reality in contemporary analytic philosophy is probably Putnam, Oppenheim (1958). Though widespread, the model has been severely criticized, mainly on the ground that it does not adequately mirror the scientific worldview – see Dupré (1993) on these criticisms.

⁵⁰ The claim that Russellian monism can be developed in a monist way might sound quite tautological: isn't it obvious that Russellian *monism* is a monist doctrine? However, it is not so obvious, since Russellian monism's main tenets (*RMI-RM3*) are actually compatible with pluralist ontologies as far as I can see (that is, they are compatible with ontologies according to which there are several kinds of fundamental entities). For instance, if you are a panpsychist Russellian monist and you believe that spatial or temporal relations are fundamental physical entities whereas quiddities are fundamental non-physical (qua experiential) entities, you are a pluralist (since you hold that there are several kinds of fundamental entities) Russellian monist (since you accept *RMI-RM3*). In other words, the reason why Russellian *monism* is so called is not that it is unavoidably monist, but that its supporters (including its originator Bertrand Russell) usually develop it in a monist way.

⁵¹ The idea that functional roles (specified in physics and played by quiddities) are basic physical entities might seem quite objectionable, on at least two grounds. First, it might be objected that functional roles cannot be *basic* physical entities, since basic physical entities are fundamental whereas functional roles, qua metaphysically constituted by other entities (i.e. topic-neutral relations), are not. Second, it might be objected that functional roles cannot be basic *physical* entities, since physical entities are concrete, whereas functional roles are (often characterized as) abstract. Regarding the first objection, it suffices to remember that, as argued in §2.3.1, Russellian physicalism does not hold (strictly speaking) that functional roles (specified in physics and played by quiddities) are fundamental, but just that those topic-neutral relations constituting functional roles (specified in physics and played by quiddities) are fundamental. I speak of functional roles (instead of topic-neutral relations constituting them) as fundamental just for the sake of simplicity. However, nothing substantive hinges on this, since the line of thought reported in the main text

fundamental entities – viz. basic physical ones. Furthermore, Russellian monism is scientifically respectable, since its ontology is easily embeddable into the layered model of reality. In fact, Russellian monists can easily grant that high-level entities treated by special sciences are *NOA* entities treated by physics; they just add the proviso that (at least some) entities treated by physics are either quiddities or are metaphysically constituted by quiddities. Hence, Russellian monism arguably shares physicalism's main virtues.

Turning to dualism now, its main virtue is that it vindicates some firmly entrenched intuitions of ours (let's call them «dualist intuitions»)⁵². There are three main kinds of dualist intuitions:

- metaphysical intuitions: it seems to us that experiential entities are distinct from physical entities – or, equivalently, that experiential entities are not physical entities⁵³;
- modal intuitions: it seems to us that physicalistically problematic worlds such as zombie worlds are metaphysically possible⁵⁴;
- epistemic intuitions: it seems to us that experiential entities evade scientific treatment in some significant way⁵⁵.

Dualism vindicates such intuitions quite straightforwardly, by holding that they are by and large correct: it seems to us that experiential entities are distinct from physical entities because experiential entities are actually distinct from physical entities; it seems to us that physicalistically problematic worlds such as zombie worlds are possible because they are actually possible (and they are actually possible since experiential entities are only contingently linked to

can be easily rephrased substituting functional-roles talk with topic-neutral-relations talk. Regarding the second objection, my reply is simply that almost all physicalists treat functional roles more or less like me, that is as physical entities (even if they are often characterized as abstract). Indeed, if functional roles were not physical, then physicalists could not appeal to them in order to build metaphysical accounts of macro-entities such as intentional ones (e.g. beliefs), whereas almost all physicalists appeal to functional roles in order to fulfill this kind of projects. Maybe the metaphysics of functional roles threatens Russellian physicalism in some subtle ways; however, this threat regards Russellian physicalism as much as any other kind of physicalism.

⁵² For a thoroughgoing discussion of dualist intuitions, see Chalmers (2018).

⁵³ Metaphysical intuitions can be elicited in many ways. They are extensively discussed (under the label «intuition of distinctness») in Papineau (2002).

⁵⁴ Modal intuitions can be elicited via conceivability arguments such as *ZA*. As argued in §2.3.3, it is doubtful that such intuitions can be profitably used in favour of conceivability arguments. Still, it is quite clear that there is some connection (even just a psychological one) between these topics.

⁵⁵ Epistemic intuitions can be elicited via Mary's thought experiment.

physical ones); finally, it seems to us that experiential entities evade scientific treatment in some significant way because experiential entities (qua non-physical) cannot be treated with the same epistemic means tailored to basic and derivative physical entities (that is, those epistemic means typically employed by natural sciences). Turning to Russellian monism, it vindicates dualist intuitions as follows. To begin with, it vindicates epistemic intuitions along dualist lines – that is, by holding that they are by and large correct. Indeed, according to Russellian monism, experiential entities are constituted by quiddities and quiddities are such that physics is silent (in the sense specified by *RM3*) about them. Therefore, it seems to us that experiential entities evade scientific treatment in some significant way since physics (as well as other natural sciences) is silent about (some) fundamental constituents of theirs in the way dictated by *RM3*⁵⁶. As far as modal and metaphysical intuitions are concerned, several versions of Russellian monism vindicate them in different ways. Here I confine myself to the following, Russellian physicalist way. Starting from modal intuitions, Russellian physicalism vindicates them by explaining them away. In particular, according to Russellian physicalism, modal intuitions (viz. the fact that it seems to us that physicalistically problematic worlds such as zombie worlds are possible) are traceable to a proposition confusion⁵⁷: it seems to us that a zombie world is possible since it seems to us that a proposition describing it (viz. $PT \ \& \ \sim Q$) is (ideally, negatively) conceivable; furthermore, it seems to us that such a proposition is conceivable since it seems to us that, for any truth of physics T , $T \ \& \ \sim Q$ is conceivable, and we mistakenly confuse the complete basic physical truth PT with some truth of physics T (even if, as argued in §2.3.2, PT is not a truth of physics). Finally, Russellian physicalism vindicates metaphysical

⁵⁶ This vindication invites the following reply: if epistemic intuitions according to which it seems to us that experiential entities evade scientific treatment are explained by the fact that experiential entities are constituted by quiddities and physics is silent about quiddities, then we should have similar intuitions about all non-fundamental entities, since (according to Russellian monism) all non-fundamental entities are metaphysically constituted by quiddities – e.g. we should have intuitions according to which tables and mountains evade scientific treatment in some significant way (since tables and mountains are constituted by quiddities and physics is silent about quiddities). I confess to be quite struck by this reply, and rather unsure about the correct way to deal with it. Tentatively, I would say that, given our cognitive architecture, we have purely functional conceptions of non-experiential non-fundamental entities (e.g. tables and mountains), whereas we have non-purely functional conceptions of experiential entities (e.g. pain occurrences). It follows that, faced with functional representations provided by physics, we run up against a gap between what it pretheoretically seems to us and what physics tells us in the case of experiential entities but not in the case of non-experiential ones.

⁵⁷ On proposition confusion, see Stoljar (2006, 74).

intuitions indirectly, that is by vindicating epistemic and modal intuitions upon which metaphysical intuitions hopefully rely. Here the vindication requires two steps. First, the idea that metaphysical intuitions are rooted in epistemic and modal ones: it seems to us that experiential entities are distinct from physical entities because it seems to us that they are modally independent from physical entities as well as inaccessible via epistemic means tailored to physical entities. Second, epistemic and modal intuitions can be accounted by Russellian physicalism, so that metaphysical intuitions can be plausibly accounted by it as well.

To sum up, Russellian monism (especially in its physicalist version) is comparatively superior to non-Russellian alternatives in philosophy of mind (i.e. non-Russellian physicalism and dualism), since it retains their main virtues yet avoiding their main vices. Hence, it should be endorsed by philosophers of mind and, in particular, by physicalists. Let's turn now to the main objections against Russellian monism, starting from global ones.

3.2.2 Global Objections

Global objections target all varieties of Russellian monism. They include the usefulness objection, the ignorance objection and the conceivability objection. Since I have no general strategy to deal with them, a case-by-case treatment is preferable. Let's start with the usefulness objection.

The usefulness objection holds that we should reject Russellian monism since it does not improve our dialectic predicament insofar as physicalism and the metaphysics of mind are concerned⁵⁸. The key idea here is that any adequate position in the debate about physicalism and the metaphysics of mind should provide a solution to the mind-body problem – more precisely, it should settle the issue of whether mental entities are fundamental or not⁵⁹. Now, with Russellian monism out of the picture, the field is divided between physicalists rejecting

⁵⁸ See Kind in Alter, Nagasawa (2015, ch. 18) on this objection.

⁵⁹ Usually, the mind-body problem is not stated as the problem of whether mental entities are fundamental or not, but as the problem of finding a place for mental entities in a world that is fundamentally physical – see Kim (1998, 2) on this standard formulation. However, the idea that the crux of the problem is whether mentality is fundamental or not gained growing support in the last few years, mostly because of some seminal papers by Barbara Montero – see, for instance, Montero (2001).

fundamental mental entities and anti-physicalists (e.g. dualists) accepting them. The usefulness objection highlights that, even granting Russellian monism, the dialectical landscape does not significantly change. Indeed, Russellian monism by itself does not settle the issue of whether mental entities are fundamental or not, being compatible both with the idea that there are fundamental mental entities (in its panpsychist version) and with its denial (in its physicalist version). Therefore, even granting Russellian monism, the field is still divided between (Russellian) physicalists rejecting fundamental mental entities and (Russellian) anti-physicalists accepting them. We are still where we started. No dialectical improvement has been achieved.

My reply is twofold. To begin with, surely Russellian monism by itself does not settle the issue of whether mental entities are fundamental or not. However, criticizing it for this reason would be rather unfair, since Russellian monism does not aim to solve the mind-body problem. It just aims to provide a new framework within which this issue (as well as similar ones) can be fruitfully addressed⁶⁰. Furthermore, even if Russellian monism does not suppress the physicalism/anti-physicalism divide, it significantly reshapes its sides (indeed, it swaps standard physicalism with Russellian physicalism and standard anti-physicalist doctrines such as epiphenomenal dualism and dualistic emergentism with panpsychism and panprotopsyism); hence, Russellian monism significantly changes the dialectical landscape after all.

The ignorance objection holds that we should reject Russellian monism since it attributes an unacceptable kind of ignorance to us. Indeed, Russellian monism entails that what seems our best epistemic tool to deal with fundamental entities (viz. physics) is silent on some such entities (viz. quiddities) in a very significant way, so that we turn out to be significantly ignorant about such fundamental entities and other, non-fundamental entities as well – at least insofar as their fundamental nature is concerned⁶¹. Now, Russellian monism admittedly entails that what seems our best epistemic tool to deal with fundamental entities (that is, physics) has significant limitations. Therefore, it surely attributes a certain ignorance about fundamental entities (and about the fundamental nature of other,

⁶⁰ On this reply, see Alter, Pereboom (2019, §3.2) and Westphal (2016).

⁶¹ Let's remember that I equate the fundamental nature of x with the nature of x 's fundamental metaphysical constituents – so that, for instance, x 's fundamental nature is experiential just in the case x 's fundamental metaphysical constituents are experiential.

non-fundamental entities as well) to us. Let's call this ignorance «Russellian ignorance». Thus the crux of the ignorance objection can be stated as follows: is Russellian monism objectionable qua attributing Russellian ignorance to us?

To begin with, the sheer fact that a theory attributes a certain ignorance to us (even ignorance of a perennial kind) does not impair it so much as far as I can see. Indeed, qua cognitive agents shaped by evolution and other natural mechanisms, it is likely that our cognitive faculties are limited in many ways, condemning us to several kinds of ignorance (even ignorance of a perennial kind). Specific kinds of ignorance such as skeptical ignorance are surely problematic, so that theories attributing such kinds of ignorance to us are objectionable to some degree. However, skeptical ignorance is problematic just insofar as it is very extreme. More precisely, skeptical ignorance is problematic qua irremediable (X -skepticism holds that we are ignorant about X s irrespectively of epistemic means via which we approach them, so that our ignorance cannot be overcome via any cognitive breakthrough), very counterintuitive (X -skepticism holds that we are ignorant about X s even if it decidedly seems to us that we are not), and hugely massive (X -skepticism holds that we are almost completely ignorant about X s). Still, Russellian ignorance does not share such problematic features. More precisely, it is not hugely massive (Russellian monism grants that we know many things about quiddities, holding that we are just partially ignorant about them; more precisely, Russellian monism just denies there are truths of physics knowing which we would be able to distinguish the actual world from a world which is a functional duplicate but not a quiddistic duplicate of it), not irremediable (Russellian monism holds that we are partially ignorant about quiddities just insofar as we epistemically approach them via physics, leaving open the possibility that we might know them more deeply resorting to other epistemic means), and not very counterintuitive either (Russellian monism holds that we are partially ignorant just about some fundamental entities and about the fundamental nature of other, non-fundamental items; still, as far as I can see, we lack strong intuitions according to which we are completely knowledgeable about these matters). To sum up, Russellian monism actually attributes a certain ignorance (i.e. Russellian ignorance) to us; however, this ignorance does not share those problematic features making other kinds of ignorance (e.g. skeptical

ignorance) unacceptably extreme. Hence Russellian monism is not objectionable qua attributing Russellian ignorance to us.

Finally, the conceivability objection holds that we should reject Russellian monism, since it succumbs to conceivability arguments analogous to those threatening *IP*. In order to see why, let's kick off supposing that (as Russellian physicalism demands) there are quiddities and quiddities are basic physical entities, so that the complete basic physical truth *PT* involves the complete truth about quiddities – let's rename the complete basic physical truth «*PT_q*» in order to highlight that it involves the complete truth about quiddities. The conceivability objection holds that, granting such assumptions, the following conceivability argument can be mounted against Russellian physicalism:

Anti-Russellian Conceivability Argument

- (P1) *PT_q* & $\sim Q$ is ideally, negatively conceivable;
- (P2) whatever is ideally, negatively conceivable is metaphysically possible;
- (C) *PT_q* & $\sim Q$ is metaphysically possible.

Now, the conclusion of this argument clearly threatens Russellian physicalism. Indeed, that *PT_q* & $\sim Q$ is metaphysically possible entails that *MPD* (viz. the minimal basic physical duplicate thesis, according to which every minimal basic physical duplicate of the actual world is an experiential duplicate of it) is false; however, as argued in chapter 1, that *MPD* is false entails that *EP* (viz. experiential physicalism, according to which every experiential entity is *NOA* basic physical entities) is false; furthermore, that *EP* is false entails that *IP* is false; and, finally, that *IP* is false entails that Russellian physicalism (that is, the conjunction of *IP* and Russellian monism) is false in turn. However, this argument is not a big deal in my opinion, since it can be undercut in the same way standard anti-physicalist conceivability arguments have been undercut in chapter 2. In a nutshell, the problem with the aforementioned anti-Russellian conceivability argument is that, from a Russellian physicalist perspective, its first premise turns out to be highly doubtful and, hence, arguably rejectable, since:

- *PT_q* is not a truth of physics, so that the main argument in favour of *PI*

(i.e. the conceptual truths argument) turns out to be utterly unconvincing – and, consequently, there are no good reasons to believe that *PI* is true;

- PT_q involves concepts (i.e. quiddistic concepts) about which we are massively ignorant and we should not believe conceivability claims involving this kind of concepts, so that there are good reasons to not believe that *PI* is true.

So much for global objections. Now, let's close this section scrutinizing local ones.

3.2.3 Local Objections

Local objections target specific varieties of Russellian monism – panpsychist and panprotopsychist varieties mostly. They include the causal objection, the weirdness objection and the combination objection. I have a general strategy to deal with them. More precisely, my reply is simply that, insofar as they target panpsychist and panprotopsychist varieties of Russellian monism, they are beside the point in this context, since Russellian physicalism is not threatened by them. I already addressed the causal objection in §3.1.2, explaining why it is innocuous from a Russellian physicalist perspective. Let's turn now to the weirdness objection and the combination objection.

The weirdness objection holds that we should reject Russellian monism since it is too weird, that is strange and counterintuitive. Now, first off let's pause on why Russellian monism seems so weird. My bet is that its weirdness is mostly rooted in its alleged pan(proto)psychist consequences: Russellian monism is often developed in panpsychist or panprotopsychist ways, so that it might seem weird insofar as such latter doctrines are weird⁶². However, not all versions of Russellian monism have panpsychist or panprotopsychist consequences, since some of them are not developed in panpsychist or panprotopsychist ways. In particular, Russellian physicalism lacks such consequences, since it eschews the idea that quiddities are (proto)experiential; hence, Russellian physicalism is not weird after all. Moreover, even if we granted that Russellian monism is weird qua strange and counterintuitive, this would not be a significant shortcoming, since

⁶² As pointed out in Brüntrup, Jaskolla (2017, 2), the so-called incredulous stare is the most common reaction caused by views imbuing fundamental entities with mentality (e.g. panpsychism).

strangeness and counterintuitiveness are not good reasons to reject a philosophical theory (especially insofar it concerns matters of fundamental metaphysics). Indeed, as observed in §2.3.3, a great amount of scientific evidence suggests that fundamental entities are very strange and counterintuitive on their own, independently from our philosophical commitments.

Finally, the combination objection holds that we should reject Russellian monism since it engenders the so-called combination problem – and such a problem is intractable. To a first approximation, the combination problem is the problem of making sense of (proto)experiential combination – that is, of the idea of relatively simple (proto)experiential entities metaphysically constituting relatively complex experiential ones⁶³. There are several combination problems, since this rough formulation can be honed in many ways. Here there are some of them:

- experiential combination problem: the problem of making sense of experiential combination (that is, of the idea of relatively simple experiential entities metaphysically constituting relatively complex ones);
- protoexperiential combination problem: the problem of making sense of protoexperiential combination (that is, of the idea of relatively simple protoexperiential entities metaphysically constituting relatively complex experiential ones);
- subject combination problem: the problem of making sense of subjects combination (that is, of the idea of relatively simple experiential individuals metaphysically constituting relatively complex ones);
- qualia combination problem: the problem of making sense of qualia combination (that is, of the idea of relatively simple experiential properties metaphysically constituting relatively complex ones)⁶⁴.

⁶³ The *locus classicus* of the combination problem is William James' *The Principles of Psychology* (1890), even if the label actually comes from Seager (1995). The literature on the topic has hugely grown in the last few years; for some useful surveys, see Coleman (2012) and Chalmers in Brüntrup, Jaskolla (2017, ch. 7). Furthermore, let's remember that by «relatively simple entities» I mean entities existing at relatively low levels of constitutional complexity (e.g. individuals such as micro-particles, or properties such as having spin up), whereas by «relatively complex entities» I mean entities existing at relatively high levels of constitutional complexity (e.g. individuals such as tables, or properties such as being wise).

⁶⁴ See Chalmers in Brüntrup, Jaskolla (2017, ch. 7) for an exhaustive taxonomy of combination problems.

It is likely that both panpsychist and panprotopsychoist versions of Russellian monism give rise to such problems. Indeed, both posit relatively simple (proto)experiential entities (viz. quiddities) metaphysically constituting relatively complex experiential ones (e.g. pain), being so obliged to make sense of the idea of (proto)experiential combination. On the contrary, Russellian physicalism avoids these problems at a first glance, since it does not involve the idea of (proto)experiential combination at all. In fact, Russellian physicalism does not hold that there are relatively simple (proto)experiential entities, so that it is not obliged to make sense of the idea that such entities metaphysically constitute relatively complex experiential ones. It might be objected that there is a combination problem targeting Russellian physicalism after all: the problem of making sense of the idea of relatively simple, neither experiential nor protoexperiential entities metaphysically constituting relatively complex, experiential ones. However, as far as I can see, this latter kind of combination is problematic just insofar as it is backed up by anti-physicalist arguments (such as ZA) purporting to show that experiential entities are not wholly metaphysically constituted by basic physical ones, and such arguments are unpersuasive from a Russellian physicalist perspective. Hence, this alternative variety of combination problems does not threaten Russellian physicalism either.

At this stage, it might be further objected that, as far as combination problems are concerned, any alleged dissimilarity between Russellian physicalism and Russellian panpsychism (or Russellian panprotopsychoism) vanishes, since the line of reply adopted by Russellian physicalists can be adopted by Russellian panpsychists (or Russellian panprotopsychoists) as well. More precisely, Russellian panpsychists can mimic Russellian physicalists here, by holding that their combination problems are problematic just insofar as they are backed up by certain anti-panpsychist arguments (e.g. Goff's anti-panpsychist zombie argument⁶⁵), and that such arguments are unpersuasive from a Russellian

⁶⁵ Let a micro-experiential zombie world be a world which is (i) a minimal basic physical duplicate of the actual world, (ii) a micro-experiential duplicate of the actual world (viz. a duplicate of the actual world as far as relatively simple experiential properties are concerned), but (iii) not a macro-experiential duplicate of the actual world (viz. not a duplicate of the actual world as far as relatively complex experiential properties are concerned, since no relatively complex experiential property is instantiated at it). According to Philip Goff, panpsychism is threatened by the following conceivability argument: a micro-experiential zombie world is (ideally, negatively) conceivable; whatever is (ideally, negatively) conceivable is metaphysically possible; therefore, a micro-

panpsychist perspective. Still, this reply misses the point as far as I can see. Indeed, the point of the combination problem is that the very notion of (proto)experiential combination is confuse or obscure, so that any theory involving it risks to fall into troubles. However, this notion looks obscure and confuse quite independently from conceivability arguments: it looks so just because we lack any positive idea of (proto)experiential combination, and we are unable to mention any clear example of this phenomenon. Contrariwise, Russellian physicalism relies just on the rather uncontroversial notion of physical combination (that is, on the idea of relatively simple physical entities metaphysically constituting relatively complex ones). In particular, Russellian physicalism maintains that experiential entities are relatively complex physical entities metaphysically constituted by simpler physical ones. However, the notion of physical combination is neither confused nor obscure: we have a positive conception of it, and we can pick out many clear examples of this phenomenon. The upshot is that Russellian physicalism is in a vantage point in relation to Russellian panpsychism (or Russellian panprotopsychism) as far as combination problems are concerned, since the notion of physical combination involved by Russellian physicalism is problematic just insofar as conceivability arguments such as *ZA* are convincing (so that it suffices to rebut these arguments in order to legitimize such a notion), whereas the notion of (proto)experiential combination involved by Russellian panpsychism (or Russellian panprotopsychism) looks problematic quite independently from conceivability arguments such as Goff's anti-panpsychist zombie argument (so that it does not suffice at all to rebut these arguments in order to legitimize such a notion).

To sum up, I hopefully established that Russellian monism is an appealing doctrine for physicalists. However, I overlooked a very contentious Russellian commitment so far – that is, the existence of quiddities. Therefore, I will finalize this last chapter by a closer examination of it.

experiential zombie world is metaphysically possible – and, consequently, relatively complex experiential entities are not *NOA* relatively simple experiential entities plus basic physical ones (as panpsychism demands). See Goff (2009) and Goff (2017) on this argument.

3.3 *The Modal Challenge to Quiddities*

Quiddities are vitally important for any kind of Russellian monism. Indeed, all Russellian monism's main tenets crucially involve them – more precisely, *RM1* holds that quiddities are actually instantiated, *RM2* that they metaphysically constitute experiential entities, and *RM3* that physics is silent (in a certain relevant sense) about them. As explained in §2.2.1, quiddities are just fundamental properties playing functional roles specified in physics as well as modally independent (to a certain extent at least) from functional roles. This means that, even if a quiddity *Q* actually plays a certain functional role *R*, it is not necessary that *R* is played by *Q* – or, in other words, there are possible worlds at which some other quiddity *Q'* plays *R* instead of *Q*⁶⁶.

Now, given that quiddities are fundamental properties playing functional roles specified in physics as well as modally independent from such roles, it follows that they can be rejected on two grounds at least. First, it might be doubted that there are fundamental role-players. In particular, it might be doubted that any fundamental entity is a role-player or, more radically, it might be doubted that any entity is fundamental at all. The hypothesis that there are no fundamental entities has been scrupulously scrutinized in recent years, gaining a few supporters⁶⁷. However, the contrary idea that some entities are actually fundamental is common ground in debates about physicalism, Russellian monism and the metaphysics of mind, so that I will grant it here⁶⁸. Furthermore, given the weak conception of functional roles and role-players involved in such debates (that is, functional roles as bunches of logico-mathematical, spatial, temporal, causal and nomic relations, and role-players as entities entertaining such relations), it seems quite reasonable to grant that (at least some) fundamental entities are role-players. Therefore, the first ground to reject quiddities looks rather weak. However, quiddities might be rejected on a second, more substantive ground, since it might be doubted that fundamental role-players are modally independent from functional roles. In particular, so-called dispositional essentialists have

⁶⁶ For more on this point, see §3.3.1.

⁶⁷ See Schaffer (2003) for a careful and seminal defense.

⁶⁸ Let's spot that, even if ontological foundationalism (i.e. the claim that some entities are metaphysically fundamental) is often presupposed in this context, physicalism does not actually require it, being compatible with the absence of fundamental entities instead – see Montero (2006) on this point.

extensively argued that the link between a fundamental role-player and its functional role is necessary to a certain extent, thus putting in jeopardy the modal independence that fundamental role-players should enjoy in order to qualify as quiddities⁶⁹. In the current section, I scrutinize this modal challenge to quiddities. More precisely, the section is structured as follows.

In the first subsection, I introduce the debate about the modal status of the link between fundamental role-players and functional roles («modal status debate» for short). In particular, I stress its importance, and list three leading positions involved in it: contingentism and two varieties of necessitarianism (weak and strong necessitarianism). In remaining subsections, I argue that quiddities are not seriously threatened by such a debate. Indeed, even endorsing a necessitarian perspective, the commitment to quiddities remains tenable, since quiddities are not ruled out by weak necessitarianism and weak necessitarianism is necessitarian enough. In particular, in the second subsection, I argue that quiddities are threatened just by strong necessitarianism, being allowed by contingentism and weak necessitarianism instead. Finally, in the third subsection, I claim that weak necessitarianism is necessitarian enough, since it suffices to do justice to the main necessitarian ideas. In particular, I argue that it vindicates two key considerations pushing toward necessitarianism in the first place; and, furthermore, I criticize the major argument favouring strong over weak necessitarianism. That said, let's start introducing the modal status debate.

3.3.1 The Modal Status Debate

As mentioned above, the modal status debate concerns the modal status of the link between fundamental role-players and functional roles specified in physics and played by them («functional roles» for short). The main divide here is between contingentism and necessitarianism, where the former holds that fundamental role-players are only contingently linked to their functional roles,

⁶⁹ Dispositional essentialism emerged between the Seventies and the Eighties, thanks to some seminal works in philosophy of science and philosophy of mind – see Harré, Madden (1975) and Shoemaker in Van Inwagen (1980, 109-136), respectively. In recent years, it has been remarkably developed and defended by Ellis (2001) and Bird (2007), among others. Let's note that, even if dispositional essentialists usually state their position in terms of fundamental properties and dispositions associated with them (in particular, they hold that the link between a fundamental property and the dispositions associated with it is necessary), an analogous position can be supported via similar considerations putting the issue in terms of fundamental role-players and roles played by them.

whereas the latter holds that fundamental role-players are necessarily linked to their functional roles instead. Three leading positions are adoptable in this debate. For the sake of simplicity, let's state them focusing on a specific fundamental role-player/functional role couple. In particular, let's suppose that mass is a fundamental role-player, and let's focus on the mass/mass-role couple – or M/R_M for short (where « M » stands for mass and « R_M » for the mass-role). The modal status debate concerns the modal status of the link between M and R_M : is it necessary or contingent?⁷⁰ Three main answers are available:

- *Contingentism*: the link between M and R_M is completely contingent, since there are possible worlds at which M is instantiated without playing R_M as well as possible worlds at which R_M is played without being played by M – in other words, playing R_M is neither necessary nor sufficient (across possible worlds) to be (identical with) M ;
- *Weak Necessitarianism*: the link between M and R_M is partially necessary, since there are no possible worlds at which M is instantiated without playing R_M , but there are possible worlds at which R_M is played without being played by M – in other words, playing R_M is necessary but insufficient (across possible worlds) to be (identical with) M ,⁷¹
- *Strong Necessitarianism*: the link between M and R_M is completely necessary, since there are neither possible worlds at which M is instantiated without playing R_M nor possible worlds at which R_M is played

⁷⁰ Let's point out that « R_M » is not defined as «the functional role played by M , whatever it is» (so that, if different functional roles are played by M at different possible worlds, then R_M refers to different items across possible worlds). Indeed, if it were so defined, the idea that M and R_M are necessarily linked could be trivially established on purely definitional grounds. Contrariwise, « R_M » is defined as «the functional role played by M at the actual world» (so that R_M refers to the same item across possible worlds, even if different functional roles are played by M at different worlds). So doing, the idea that M and R_M are necessarily linked is more controversial, and it needs substantive grounds in order to be established.

⁷¹ In principle, another kind of weak necessitarianism should be available. According to this further variety of the doctrine, the link between M and R_M is partially necessary, since there are possible worlds at which M is instantiated without playing R_M , but there are no possible worlds at which R_M is played without being played by M – in other words, playing R_M is sufficient but unnecessary (across possible worlds) to be (identical with) M . I overlooked this position since it is no more than a *locus* in the logical space, being not particularly palatable neither for contingentists nor for necessitarians. Indeed, contrary to contingentism, it introduces a substantive kind of modal dependence between M and R_M . Furthermore, contrary to necessitarianism, it characterizes this modal dependence in such a way as to not vindicate a key idea pushing toward necessitarianism in the first place – i.e. the idea that playing R_M is an essential feature of M , so that M plays R_M at all possible worlds at which it exists.

without being played by M – in other words, playing R_M is necessary and sufficient (across possible worlds) to be (identical with) M .

Now, how does the modal status debate bear on quiddities? In the next subsections, I am going to tackle this issue. In particular, I am going to argue that no serious challenge to quiddities stems from the modal status debate. In fact, first off, quiddities are compatible both with contingentism and with weak necessitarianism, so that Russellian monists have a certain room for manoeuvre here, and they can afford to remain neutral (to a certain extent at least) on the contingentism/necessitarianism divide. Moreover, even if strong necessitarianism rules quiddities out, this is not a fatal threat, since weak necessitarianism is necessitarian enough – indeed, key considerations pushing toward necessitarianism in the first place can be satisfactorily vindicated by the weak variety of the doctrine; and, furthermore, the major argument favouring strong over weak necessitarianism is ultimately unconvincing. That said, let's start showing that both contingentism and weak necessitarianism allow for quiddities.

3.3.2 Contingentism and Weak Necessitarianism

As argued in §2.2.1, granting that quiddities are actually instantiated, their modal independence from functional roles just means that there is a possible world w such that w is a functional duplicate of the actual world but not a quiddistic duplicate of it. Furthermore, given that quiddities are nothing but fundamental role-players enjoying this kind of modal independence, the existence of w just amounts to the existence of a world with the same world-wide pattern of distribution of functional roles as the actual world but a different world-wide pattern of distribution of fundamental role-players. Hence, in order to establish that contingentism and weak necessitarianism allow for quiddities, it suffices to show that they allow for worlds of this latter kind.

Starting from the M/R_M case, both contingentism and weak necessitarianism arguably allow for possible worlds at which R_M is played without being played by M , so that both should allow for possible worlds with the same world-wide pattern of distribution of R_M but a different world-wide pattern of distribution of M (since, for instance, instantiations of M are systematically swapped with

instantiations of another, merely possible fundamental role-player M^{*72}). Furthermore, generalizing from this case, both contingentism and weak necessitarianism should allow for possible worlds with the same world-wide pattern of distribution of functional roles of the actual world but a different world-wide pattern of distribution of fundamental role-players (since, for instance, instantiations of actual fundamental role-players are systematically swapped with instantiations of other, merely possible ones). However, in order to establish that contingentism and weak necessitarianism allow for quiddities, it suffices to show that they allow for worlds of this latter kind. Therefore, contingentism and weak necessitarianism actually allow for quiddities⁷³.

Unlike contingentism and weak necessitarianism, strong necessitarianism poses a *prima facie* threat to quiddities instead, since it holds that playing R_M is sufficient (across possible worlds) to be (identical with) M , thus ruling out possible worlds at which R_M is played without being played by M – and, *a fortiori*, possible worlds with the same world-wide pattern of distribution of R_M but a different world-wide pattern of distribution of M . Furthermore, generalizing from this case, strong necessitarianism seems to rule out possible worlds with the same world-wide pattern of distribution of functional roles of the actual world but a different world-wide pattern of distribution of fundamental role-players. However, as previously observed, if such worlds are ruled out, then quiddities are ruled out too (since quiddities are modally independent from functional roles in the sense that they demand the existence of such worlds). Therefore, it seems that, unlike contingentism and weak necessitarianism, strong necessitarianism is incompatible with the existence of quiddities.

To sum up, contingentism and weak necessitarianism do not threaten quiddities, since they do not demand that playing R_M is sufficient (across possible worlds) to be (identical with) M . So doing, they attribute to M a degree of modal

⁷² David Lewis labeled «aliens» fundamental properties of this kind, invoking swapping scenarios involving them in order to establish the existence of quiddities – see Lewis in Braddon-Mitchell, Nola (2009, ch. 9) on this point.

⁷³ The idea that weak necessitarianism allows for quiddities might sound strange, since necessitarian positions are sometimes characterized as positions rejecting quiddities. However, it should be born in mind that the notion of quiddity (as almost any philosophical notion) is defined in different ways by different philosophers, so that quiddities as they are usually defined in debates about Russellian monism can be allowed by weak necessitarianism even if quiddities defined in other ways (for instance, as fundamental properties which are completely modally independent from their functional roles) are not allowed by any kind of necessitarianism.

independence (from R_M) which is sufficient to vindicate the idea that it qualifies as a quiddity. Contrariwise, strong necessitarianism denies even this residual modal independence of M (from R_M), thus posing a *prima facie* threat to the idea that fundamental role-players such as M qualify as quiddities. However, this threat is far from fatal, as I am going to argue in the last subsection.

3.3.3 *Weak Necessitarianism As Necessitarian Enough*

I cannot fully engage with the modal status debate here, since a satisfying appraisal of it would require a significant amount of pages and technicalities. Therefore, I will limit myself to argue that, if pushed by necessitarians to take a stance on this debate, Russellian monists can satisfactorily retreat to weak necessitarianism. In fact, to begin with, weak necessitarianism vindicates two key ideas pushing toward necessitarianism in the first place; and, furthermore, the main argument favouring strong over weak necessitarianism is unconvincing as far as I can see.

To begin with, there are two key ideas pushing toward necessitarianism in the first place: it seems that necessitarianism gives us better accounts of physics and laws of nature. In order to see why it seems that necessitarianism gives us a better account of physics, let's kick off remembering that, as argued in chapter 2, physics characterizes its posits just as role-players – that is, it tells us about M just that it plays a certain functional role R_M . However, according to necessitarianism, playing R_M is a necessary feature of M (i.e. a feature possessed by M at every possible world at which it exists); therefore, according to necessitarianism, physics informs us about M 's necessary features. Moreover, according to the usual characterization of the notion of essence, the essence of something is nothing but the collection of its necessary features⁷⁴. It follows that, according to necessitarianism, physics informs us about M 's essence, and this claim looks like a substantial advantage of necessitarian accounts of physics. Indeed, vindicating

⁷⁴ More precisely, the essence of something is the collection of its essential properties, where the essential properties of something are just its necessary properties – at least according to the standard, modal account of essential properties, for which see Robertson, Atkins (2018, §1). This account has been strongly criticized by Kit Fine and others – see Fine (1994). Indeed, according to Fine, an essential property of a thing should be a property bound up with what it is to be that thing; still, many necessary properties of a thing do not seem linked at all with what it is to be that thing. For instance, granting that $2 + 2 = 4$ is a necessary truth, Socrates has the necessary property of being such that $2 + 2 = 4$, even if this property is not linked at all with what it is to be Socrates – and, therefore, it should not figure among Socrates' essential properties (as the modal account of such properties wrongly demands).

the idea that physics gives us significant insights about the essence of fundamental entities such as M seems an inviting *desideratum* for any account of physics. So much for necessitarian accounts of physics. Let's now turn to laws of nature, in order to show why it seems that necessitarianism gives us a better account of them. Here the basic idea is that laws of nature partly constitute functional roles played by fundamental properties – e.g. laws of nature involving M partly constitute R_M . However, according to necessitarianism, playing R_M is a necessary feature of M , so that laws of nature involving M are necessary too (viz. they govern M at every possible world at which it exists) – and, furthermore, they can be simply and elegantly derived from the very essence of M (in particular, from its playing R_M). Moreover, these consequences of necessitarianism look like substantial advantages of necessitarian accounts of laws. Indeed, vindicating the ideas that laws of nature are necessary (in particular, they enjoy full-blown metaphysical necessity, according to necessitarianism) and that they flow from the very essence of physics' fundamental posits (e.g. laws involving M flow from M 's essence) seem inviting *desiderata* for any account of laws.

Now, I am not very interested here in establishing whether these necessitarian lines of thought are persuasive or not – in other words, whether necessitarianism actually gives us better accounts of physics and laws of nature or not. Contrariwise, I limit myself to observe that, if such lines of thought are persuasive, then they support weak and strong necessitarianism to the same extent, since they hinge on the idea that playing R_M is necessary (across possible worlds) to be (identical with) M , and such an idea is vindicated by both varieties of necessitarianism. In other words, the two main reasons pushing toward necessitarianism in the first place are satisfactorily vindicated by weak necessitarianism – or, to sum up in a slogan, weak necessitarianism is necessitarian enough (insofar as such reasons are concerned).

At this stage, it might be replied that there are convincing arguments favouring strong over weak necessitarianism, so that anyone persuaded by necessitarian lines of thought should endorse the former. More precisely, there seems to be an epistemological argument according to which any position in the modal status debate falling short of strong necessitarianism has pernicious epistemological consequences, so that strong necessitarianism should be preferred. Here the point is roughly that any position falling short of strong necessitarianism allows for

possible worlds which are functional duplicates of the actual world and yet profoundly differ from it as far as the fundamental level of reality is concerned – for instance, any position of this kind allows for a possible world w which has the same world-wide pattern of distribution of R_M of the actual world but a very different world-wide pattern of distribution of M (since instantiations of M are systematically swapped with instantiations of another, merely possible fundamental role-player M^*). Still, the metaphysical possibility of w risks to have epistemologically disastrous consequences, since it seems that we have no means to ascertain that the actual world is not like w – and, consequently, it seems that we do not know that M is instantiated but M^* is not. However, if we do not know that M is instantiated, then we do not know that M plays any functional role specified in physics (indeed, if we knew that M plays a certain functional role specified in physics, then we would surely know that M is instantiated, since playing a functional role specified in physics entails being instantiated); and, furthermore, if we do not know that M plays any functional role specified in physics, then we do not know almost anything about M (since we have almost no information about fundamental role-players over and above their playing certain functional roles specified in physics).

This conclusion is surely unacceptable. However, before embracing strong necessitarianism in order to avoid it, we should pause on the reasoning backing it up. Indeed, it alarmingly looks like those skeptical arguments holding that we are almost completely ignorant about the so-called external world, since it is metaphysically possible that the external world hugely differs from how we take it to be. In both cases, the reasoning starts by presenting a fancy metaphysical possibility (in the case of standard, external-world skepticism, such possibilities usually involve subtle kinds of radical deception carried out by some powerful agents – viz. Descartes' evil demon or Putnam's mad scientist⁷⁵); then it goes on pointing out that we do not know whether such a possibility is actualized or not; and, finally, it concludes that we do not know almost anything about a certain subject matter. In other words, the epistemological argument for strong necessitarianism is just a further variety of familiar skeptical arguments about the

⁷⁵ On the evil demon hypothesis, see Descartes' First Meditation; on Putnam's mad scientist, see Putnam (1981, ch. 1).

external world. It follows that, insofar as these latter arguments are usually deemed as unpersuasive, the former should be considered unpersuasive too⁷⁶.

To sum up, no fatal challenge to quiddities stems from the modal status debate. Indeed, two out of three of the leading positions in the debate actually allow for quiddities. Furthermore, even if the third leading position (viz. strong necessitarianism) rules quiddities out, this is not a serious problem, since strong necessitarianism is far from mandatory even granting a necessitarian perspective – more precisely, it is far from mandatory because, to begin with, the key motivations pushing toward necessitarianism are satisfactorily vindicated by weak necessitarianism; and, furthermore, because the main argument favouring strong over weak necessitarianism is ultimately unconvincing.

⁷⁶ More precisely, as argued by Jonathan Schaffer, each one of the many and varied strategies devised in order to undercut arguments in favour of external world skepticism has a close relative undercutting the epistemological argument for strong necessitarianism – see Schaffer (2005) for further details.

Conclusion

Encountering Russellian monism for the first time, I have been struck by the fact that such a theory was praised by anti-physicalists mostly. This fact startled me, since I was unable to see anything inherently anti-physicalist about Russellian monism: as far as I could see, Russellian monism was neutral on the physicalism/anti-physicalism divide. This state of affair pushed me toward such a poorly explored area of philosophical research – that is, the area at the intersection between physicalism and Russellian monism. In my opinion, it was incautious to leave this virgin theoretical terrain entirely to anti-physicalist colonizers. Thus my doctoral dissertation can be primarily understood as an attempt to restore the balance between physicalists and anti-physicalists as far as Russellian terrains are concerned. This attempt has been hopefully accomplished in previous chapters, and I do not wish to retrace my steps here. However, in these last pages, I would like to spend some words on a related issue: if there is nothing anti-physicalist about Russellian monism, then why so much anti-physicalist enthusiasm (and so little physicalist enthusiasm) about it?

The answer that immediately comes to mind is that the question actually involves a false presupposition: it is untrue that there is nothing anti-physicalist about Russellian monism. As far as I can see, there are two main ways to develop this line of thought. First, it might be argued that Russellian monism is anti-physicalist since it denies that physics is able to completely capture the fundamental nature of reality, whereas physicalism involves such an idea. More precisely, here the point is that, according to Russellian monism, there are fundamental features of the world (those quiddistic features distinguishing the actual world from possible worlds which are functional duplicates but not quiddistic duplicates of it) which are completely overlooked by physics (as far as physics is concerned, it is as if there were no such features), so that physics turns out to be unable to completely capture the fundamental nature of reality, given that it is unable to capture these quiddistic, fundamental features themselves. Second, it might be argued that Russellian monism is anti-physicalist since it is bound to

posit non-physical fundamental entities (viz. non-physical quiddities), whereas physicalism involves the idea that all fundamental entities are physical. However, these lines of thought are far from convincing.

Indeed, to begin with, that physics is able to completely capture the fundamental nature of reality is an epistemic claim, a claim about the epistemic reach of physics. Let's call such a claim «epistemic completeness of physics». It might seem a seductive claim from a physicalist point of view; however, as repeatedly observed by philosophers dealing with the interpretation problem, physicalism is a metaphysical doctrine, so that it should be kept free of epistemic elements as much as possible. Maybe physicalism understood as a purely metaphysical claim entails the epistemic completeness of physics; still, arguments are needed in order to establish this entailment – and, in the absence of them, the entailment itself cannot be taken for granted. It might be objected that physicalism without the epistemic completeness of physics is not worth having. Still, I do not see why it should not be: even discharging the epistemic completeness of physics, physicalism remains philosophically appealing (qua monist), scientifically respectable (qua easily embeddable into the so-called scientific worldview) and dialectically well-supported (qua established by the powerful causal closure argument). Its main virtues remain untouched, whether epistemic completeness is accepted or not. So why should physicalism without epistemic completeness be deemed as irremediably impoverished?

The idea that Russellian monism is anti-physicalist since it is bound to posit non-physical quiddities is equally groundless. In fact, as argued in §3.1.1, quiddities can be surely considered physical entities according to the (plausible) negative interpretation; moreover, they can be arguably considered physical entities according to the (much more widespread) theory interpretation as well. Finally, and on top of that, it would be wrong to hold that quiddities are non-physical qua experiential or protoexperiential, since arguments establishing that quiddities are experiential or protoexperiential – viz. pan(proto)psychist Russellian arguments – are unconvincing (as shown in §3.1.3). The upshot is that our initial question did not conceal any false presupposition. Still it has to be answered yet – and, in order to find a plausible answer, a brief historical detour might be useful.

For several decades, the debate about physicalism and the metaphysics of mind has been caught in a dilemma. On the one hand, physicalists had an informative and well-supported view about the fundamental nature of reality, without being able to convincingly extend such a view to experiential entities – indeed, their attempts to extend physicalism to experiences were repeatedly foiled by anti-physicalist complaints. On the other hand, anti-physicalists had powerful objections against such a desired extension, without being able to conjure up their own alternative, believable account of experiences themselves. In fact, any anti-physicalist account of experiences seemed forced to deny at least one premise of the causal closure argument, thus falling prey to gross implausibilities – e.g. *The Conscious Mind* (1996), probably the most influential anti-physicalist book in philosophy of mind for the last thirty years, denied the causal efficacy of experiences, being so forced to endorse an utterly unlikely account of them such as epiphenomenalism. It's here that Russellian monism entered the scene, by supplying anti-physicalists with the opportunity to have their cake and eat it too: in fact, armed with it, anti-physicalists seemed finally able to deny that experiences are physical without rejecting any premise of the causal closure argument – since, as shown in §3.1.2, anti-physicalist Russellian monists can deal with the causal closure argument by slightly modifying the exclusion principle instead. This arguably scored a point for anti-physicalists in the long-standing controversy about the alleged physicality of experiences (even if, as shown in §3.1.2, it is doubtful that anti-physicalist Russellian monists' attempts to bypass the causal closure argument by modifying the causal closure principle actually succeed).

At this stage, a natural physicalist rejoinder might sound more or less like this: true enough, the anti-physicalist Russellian monist can deny the physicality of experiences without embracing gross implausibilities such as epiphenomenalism; still, the positive accounts of experiences at his disposal are panpsychism and quasi-panpsychist doctrines (such as panprotopsychism), and these alternatives are not much better than epiphenomenalism. Still, I think that such an objection would be decidedly misguided. Indeed, I agree with panpsychists and panprotopsychists on the idea that our aversion toward their doctrines is largely prejudicial – in a nutshell, I believe that there are not many arguments against panpsychism and panprotopsychism, just a deep-rooted feeling that such theories must be wrong.

Contrariwise, the main non-Russellian anti-physicalist doctrines (viz. epiphenomenalism and dualistic emergentism) are simply disastrous: dualistic emergentism is blatantly anti-scientific, insofar as it defends backward causation and consequently denies a firmly established empirical claim such as causal closure, whereas epiphenomenalism is just foolish, since (as evocatively observed by Jerry Fodor), if such a theory is true, then «practically everything... [we] believe about anything is false and it's the end of the world»¹.

It is true that, armed with Russellian monism, even physicalists seem to increase their dialectical resources. Indeed, the conjunction of physicalism and Russellian monism provides new, fascinating ways to rebut anti-physicalist arguments, as I tried to show in chapters 2-3. However, this vantage looks significantly weaker than those enjoyed by anti-physicalists. In fact, physicalists had promising strategies to rebut anti-physicalist arguments (e.g. the phenomenal concept strategy) well before Russellian monism entered the scene, whereas anti-physicalists did not have any believable account of experiences at that time. This fact arguably constitutes the key to answer our initial question: Russellian monism provoked much enthusiasm among anti-physicalists and little enthusiasm among physicalists since it supplied the former with new, previously unavailable resources to back their position up, whereas it gave to the latter something that they already had (i.e. a way to rebut anti-physicalist arguments). However, this answer immediately prompts a further question: if that is the case, why should Russellian physicalism be considered an improvement on traditional brands of physicalism? Indeed, if Russellian monism fails to bolster physicalism in any significant way, then it might seem that any attempt to develop a Russellian version of physicalism is nothing but a futile exercise of exploration of the philosophical space: maybe Russellian physicalism is an available option for physicalists, but if it is not superior to non-Russellian physicalism, why should we (viz. physicalists) care about it?

There are some easy answers to this second question. For instance, it might be argued that, as far as rebuttal strategies are concerned, more is better, since if you have several rebuttal strategies, then your doctrine is not essentially tied to any of them, and this looks like an advantage. Or, alternatively, it might be argued that non-Russellian rebuttal strategies (such as the phenomenal concept strategy) have

¹ Fodor (1990, 156).

been persuasively criticized (even by committed physicalists such as Daniel Stoljar), so that alternative strategies are welcome. However, I believe that a better answer is available.

As observed in §2.1, most physicalists are type-B ones (that is, they deny that whatever is conceivable is metaphysically possible, still granting that physicalistically problematic propositions are conceivable), whereas a few of them are type-A ones (that is, they deny that physicalistically problematic propositions are conceivable, still granting that whatever is conceivable is metaphysically possible). At a first sight, this widespread preference for type-B physicalism might seem quite unwise. Indeed, the idea that there is a robust link between conceivability and possibility is extremely general and influential. It informs huge areas of philosophical, scientific and commonsensical thought. And on the top of that, modal epistemology in its entirety looks based on such an idea, since reasoning on the conceivability of a certain scenario seems to be the main way for us human beings to establish whether it is possible or not. Therefore, we should be extremely careful to bring such an idea into question. The conceivability of physicalistically problematic propositions is an extremely parochial claim instead. It has no use outside philosophy and, even within philosophical circles, its influence is limited to the physicalism/anti-physicalism debate. Nothing except the tenability of physicalism hinges on it, so that it should be much easier to bring it into question. Still, type-B physicalism has been largely prevailing so far. Why?

As far as conceivability arguments are concerned, the explanation is simply that there were no plausible alternatives. Indeed, until quite recently, in order to be a type-A physicalist, you were forced to hold highly implausible doctrines such as analytic functionalism: a doctrine according to which mental sentences are synonymous with sentences involving just physical plus topic-neutral terms. Moving to other anti-physicalist arguments, the prospects of type-A physicalism were similarly unpromising (even if, maybe, slightly superior). For instance, the ability response to the knowledge argument (roughly, the idea that the argument fails since Mary does not gain any new propositional knowledge when she leaves the room, just new abilities to imagine and discern experiences) seems more likely than analytic functionalism, but it remains far from convincing all things considered. Contrariwise, no gross implausibility is implied by type-B physicalism – e.g. by the phenomenal concept strategy. Sure enough, type-B

rejoinders such as the phenomenal concept strategy have their own problems; still, they are clearly more palatable than non-Russellian type-A rejoinders.

At this stage, it should be clear why physicalists must care about Russellian physicalism – and, hence, Russellian monism itself. Russellian physicalism is by far the most plausible version of type-A physicalism. In particular, it looks like the best way to defend physicalism from anti-physicalist arguments eschewing any involvement with extremely controversial stances such as the rejection of a robust conceivability-possibility link – and this circumstance should suffice to make it extremely valuable. Therefore, physicalists should strive to cultivate it as carefully as possible.

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