Physicalism without identity[1]

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Abstract: This paper presents and discusses the most influential attempts to characterize physicalism without postulating relations of identity between the physical and the *prima facie* non-physical. The first section deals with a possible criticism that these attempts are misguided, since they contradict the physicalist slogan "everything there is physical." In the second section, I elucidate the different formulations of the physicalist supervenience claim, and argue that none of them consists in an adequate characterization of physicalism. Three reasons are given in favor of this conclusion: their compatibility with forms of dualism (or pluralism); the fact that the supervenience relation is left unexplained; and Kim's causal exclusion argument, which asserts that merely supervenient entities (i.e., ones that are not in identity relations with strictly physical entities) must be epiphenomenal. The third section presents the general features of another identity-independent attempt to characterize physicalism, namely realization physicalism. According to this view, tokens of *prima* facie non-physical types are realized by tokens of strictly physical types performing functional roles that specify the nature of the former. The third section also shows how realization physicalism deals with the objections that make physicalist supervenience claims inadequate for characterizing physicalism.

Keywords: Physicalism. Identity. Supervenience. Functionalism. Realization

Introduction

Physicalism states that everything there is physical. However, a lot of things do not seem to be physical. Bureaucracy, beliefs, bats, and almost everything we interact with in our daily lives are examples of *prima facie* non-physical entities. Physicalists should not ignore the distinguishing features of such entities. Their nature apparently makes them incompatible with the physicalist worldview. We ordinarily take them to exist, and we do not acknowledge them as members of the extension of any strict notion of

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what is physical[3]. If physicalism is an answer to the metaphysical questions of what there is or what the world is like, it must have a stance in regard to the ontological status of the multitude of putative things that are not acknowledged to be physical in a strict sense. The different positions or stances that the physicalist can have in this respect distinguish different metaphysical theses of physicalism.

The relation between strictly physical entities and *prima facie* non-physical entities can be characterized as one of identity. Indeed, the position called "identity theory" was the first attempt to characterize the metaphysical doctrine of physicalism in contemporary debates. In accordance with the original formulation of Ullin T. Place (1956) and Jack J. C. Smart (1959), identity theory claims that sensations are, in fact, identical to brain states. David Lewis (1966; 1999) generalizes identity theory to all kinds of mental states, a view later called type-physicalism. Type-physicalism asserts that all types of mental states (or *prima facie* non-physical entities) are identical to physical types. In the literature, the meaning of "type" has been elucidated by appeals to kinds, universals, sets and other things (Wetzel 2006, p. 8-14). However, in respect to the type identities postulated by type-physicalism, the possibility of equivocal interpretation should be avoided, since Place and Smart were considering identity relations between referents of terms. Type identities between the mental and the physical were conceived, thus, as relations between the things, or, more precisely, all the things to which the terms of an identity statement refer; and these referents are tokens, or individual occurrences of those types. The claim that all tokens of a determinate mental state type must be identical to tokens of a determinate physical type makes type-physicalism a strong and contentious thesis. It seems, for instance, incompatible with two tokens of a mental type (say, pain) being correlated to tokens of different physical types (PUTNAM 1975, p. 436f.). Donald Davidson (1980) and Jerry Fodor (1980) offer reasons in favor of a weaker and less contentious characterization of physicalism, one called token-physicalism. Token-physicalism also postulates identity relations between the strictly physical and the *prima facie* non-physical. Nonetheless, these identities are said to hold between individual tokens, and not whole types. It asserts that all mental tokens are identical to physical tokens, which is compatible with different tokens of a mental type being identical to tokens of different physical types.

[3] The distinction I make between the strictly physical and the *prima facie* non-physical does not preclude the possibility of an identity between entities belonging to the two classes.

Identity-based attempts to characterize physicalism do not exhaust the set of formulations available to the physicalist. The present paper investigates the prospects of some identity-independent attempts to characterize physicalism[4]. In the first section, it deals with a possible criticism that these attempts are misguided because they contradict the physicalist slogan "everything there is is physical." The second section elucidates the different formulations of the physicalist supervenience claim, and argues that none of them offers an adequate characterization of physicalism. Three reasons are given in support of this claim: their compatibility with forms of dualism (or pluralism); the fact that the supervenience relation is left unexplained; and Kim's causal exclusion argument, which asserts that merely supervenient entities (i.e., ones that are not identical to strictly physical entities) must be epiphenomenal. The third section presents the general features of another identity-independent attempt to characterize physicalism, namely realization physicalism. According to this view, tokens of *prima* facie non-physical types are realized by tokens of strictly physical types performing the functional roles that specify the *prima facie* non-physical types. The section also reveals how realization physicalism solves problems that make supervenience-based attempts to characterize physicalism unattractive.

1 Apparent incompatibility with a physicalist slogan

The attempt to conceive physicalism without the identity claim can be the object of a simple but thought-provoking criticism. According to this position, *prima facie* non-physical entities (in general or at least to some extent) exist but are not identical to what is strictly physical. Since it implies that not everything there is is physical, one might argue that an attempt to formulate an identity-independent thesis of physicalism is utterly misguided.

I do not think the conclusion presented by the criticism follows from the premises. The criticism reveals, at most, the incompatibility between the identity-independent theses of physicalism and a reading of the physicalist slogan "everything there is is physical." It is interesting to note that the appearance of incompatibility does not arise in respect to the claim "there is nothing over and above the physical." The reason is that the claim in question

[4] One often finds the theses of physicalism classified as forms of reductive or non-reductive physicalism. Because of the ambiguity of the term "reductive" in the specialized literature, I deliberately avoid these labels in favor of the clearer distinction that the presence or absence of the identity relation demarcates among physicalist theses.

reveals an important aspect of the ontological primacy of the physical that remains unclear in the other physicalist slogan. The ontological primacy of the physical postulates that only strictly physical entities *ultimately* exist. It does not deny the possibility of a derivative existence of things that are distinct from what is strictly physical.

The criticism mentioned above might motivate a terminological decision. Instead of restricting the extension of "physical" to strictly physical entities, physicalists can stipulatively define this term as also applying to what exists derivatively in respect to the strictly physical. Thus, they could appeal to two notions of the physical in trying to formulate a metaphysical thesis of physicalism: the notion of the strictly physical[5] and the notion of the derivatively physical[6]. It must be noticed that this terminological decision does not make physicalism trivially true. It would be falsified by the existence of any entity that is neither physical in the strict sense nor derivatively physical.

The following two sections investigate whether the physicalist supervenience claim and realization physicalism offer appropriate characterizations of physicalism. Both have been proposed as identity-independent theses of physicalism, in the sense that the *prima facie* non-physical is derivatively physical, but not identical to what is physical in the strict sense. In order to avoid confusion, I drop the terminological suggestion mentioned above in the following sections. Its purpose is accomplished if the reader keeps in mind that the non-identity between *prima facie* non-physical entities and strictly physical entities does not necessarily falsify physicalism. *Prima facie* non-physical entities can be derivatively physical.

2 Supervenience-based attempts to characterize physicalism

The relation of supervenience was presented as a possible substitute for the identity relation in the characterization of physicalism. I refer to the

[5] The notion of the strictly physical is also a matter of controversy among physicalists. See Gouvea (2016) for a survey of attempts to solve the problem of characterizing what is physical for physicalism, as well as a defense of the strategy based on theories of ideal physics.

[6] The extension of the derivatively physical should not be conceived as restricted to the *prima facie* non-physical entities. Following from its characterizations, the notion can also comprehend strictly physical entities. The derivatively physical is characterized as applying to entities whose existence is derivative in respect to strictly physical entities. If the existence of some strictly physical entity is not ultimate, but derivative in respect to other strictly physical entities, then this entity is both strictly and derivatively physical.

general, unspecified claim that the *prima facie* non-physical supervenes on the physical as "the physicalist supervenience claim." Different ways of specifying or formulating this general claim have been proposed. The present section elucidates some of these specific forms, but argues, following Kim, that none of them can be viewed as an appropriate characterization of physicalism.

Davidson has introduced the claim that mental properties supervene on physical properties in more recent debates concerning the formulation of physicalism (KIM 1998, p. 6). Davidson 1980, p. 111) presents his view as follows:

> […] the position I describe […] is consistent with the view that 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.

Lewis has also influentially argued for the claim that *prima facie* non-physical properties supervene on physical properties. Indeed, he suggests that the "the common core of all materialists theories of the mind" consists in a physicalist supervenience claim (1999, p. 293; see also Lewis 1999, p. 34-37 & 1987, p. x-xi). Accordingly, physicalism would be the thesis that:

> Among possible worlds where no natural properties alien to our world are instantiated, no two differ without differing physically; any two such worlds that are exactly alike are physically duplicates (LEWIS 1999, p. 37).

An alternative formulation of the same thesis was offered by Jackson (1998, p. 12): "Any world which is a *minimal* physical duplicate of our world is a duplicate *simpliciter* of our world".

Jackson elucidates the notion of a minimal duplicate as a restriction or a stop clause. A minimal physical duplicate of our world contains all the physical entities that inhabit our world, and no further addition is made. Physicalism conceived by means of this supervenience claim states that the minimal physical duplicate of our world is also a duplicate in respect to the instantiation of the *prima facie* non-physical.

Although these authors have argued for a physicalist supervenience claim, they have not relied solely on this claim in their characterizations of the

metaphysical doctrine of physicalism. Davidson argued for token physicalism (under the label of "anomalous monism), while Lewis and Jackson argued for type physicalism (under the label of "identity theory"). In contrast, some attempts have been made to present metaphysical theses of physicalism solely based on specific forms of the physicalist supervenience claim.

Departing from Davidson's view, John Haugeland (1998) proposes a formulation of physicalism based on the physicalist supervenience claim, but which eschews token identities. His criticism consists in presenting cases that reveal, in his words, "the gross implausibility of token identity theory" (HAUGELAND 1998, p. 101). The examples he discusses, the two simultaneous wave-hits on the same cork at the surface of water and the "intentional attitudes" of a chess-playing computer (HAUGELAND 1998, p. 101-105), are cases in which events are clearly distinct on the higher level, but seemingly indiscernible in the lower level description. We are not able to distinguish the two wave-hits in a description of what happens with molecules of water. We are also unable to distinguish the "attitudes" that characterize the computer's playing style in the calculations it performs according to programmed principles. In both cases, it seems that the total amount of lower level events, and not some individual token, determines the occurrence of the higher-level events.

The objection based on problematic cases is not intended to prove that token physicalism is false, but just to emphasize its implausibility (HAUGELAND 1998, p. 105f.). In its place, Haugeland suggests an attempt to characterize physicalism that is solely based on the notion of supervenience. Haugeland calls his supervenience claim "weak supervenience," in order to emphasize that it does not entail token physicalism. It states that a language supervenes upon another language in respect to a set of possible worlds if any two worlds belonging to this set are discernible by means of the first language only if they are discernible by means of the second language (HAUGELAND 1998, p. 96). Haugeland's characterization of the physicalist supervenience claim resembles Lewis' in its reference to possible worlds. Haugeland says that if two worlds cannot be discerned physically, i.e., by the language of physics, then they cannot be discerned mentally, for instance, by the language of folk psychology. Lewis does not refer to the language of physics, but to properties that physics has the task to reveal[7].

[7] Lewis (1999, p. 292): "It is the task of physics to provide an inventory of all the fundamental properties and relations that occur in the world".

In a series of papers (collected later in the book *Supervenience and Mind*), Jaegwon Kim thoroughly elucidates different formulations of the physicalist supervenience claim (I will also refer to them as "physicalist supervenience claims"). Given my intention to discuss identity-independent attempts to characterize physicalism, I will consider physicalist supervenience claims as if they worked independently of identity relations between supervenient elements and their supervenience base.

Kim (1993) argues in favor of a formulation that resembles Davidson's. It postulates a supervenience relation of the mental on the physical that consists in the necessary indiscernibility of any two individuals in respect to mental properties, if they are indiscernible in respect to physical properties (KIM 1993, p. 192). Kim refers to this characterization of the supervenience relation with the term "weak supervenience" (1993, p. 58-60; 1993, p. 79). It must be noted that this form of interpretation of the physicalist supervenience claim is not weak in the sense suggested by Haugeland. Rather, the term "weak" indicates in this case that the determination of supervenient properties on base properties is contingent. This may sound rather arbitrary and unexplained. One reasonable way to elucidate the contingent character of weak supervenience is to consider that base properties might play only a partial or restricted role in determining the occurrence of supervenient properties. In this case, a set of properties weakly supervenes on another set of properties not exclusively because of the supervenience base properties, but also because of some feature of the world in which the supervenience relation applies, e.g., natural laws. Features of the world might play some role in determining that any two physically indiscernible individuals will be indiscernible in respect to their mental properties. This possibility does not contradict the necessity of the supervenience relation. It only diminishes its modal strength, since it is governed by nomological necessity[8]. In a world where the indiscernibility of any two individuals in respect to property P determines their indiscernibility in respect to property M, every instantiation of P necessitates an instantiation of M. However, the possibility that some feature of the world might play a determinant role in cases of weak supervenience implies that, in other possible worlds, M does not supervene on P.

Strong supervenience is obtained by avoiding the possibility that makes weak supervenience weak. As Kim (1993, p. 80; see also 1993, p. 64)

[8] It must be stressed that I offer here an interpretation of Kim's notion of weak supervenience. This interpretation draws heavily on Chalmer's notion of natural supervenience (CHALMER, 1996, p. 36-38).

puts it, a formulation of strong supervenience must include a clause that "[…] guarantees world-to-world stability for the correlations between supervenient properties and their 'base properties'". This condition is satisfied in the following specification of the physicalist supervenience claim: for any possible worlds, any two individuals inhabiting different worlds are indiscernible in respect to *prima facie* non-physical properties if they are indiscernible in respect to their physical properties[9]. Such a supervenience claim asserts a local supervenience relation, in which the *prima facie* non-physical properties of an individual are fully determined or necessitated by its physical properties. It denies, thus, the possibility that supervenient mental properties might also depend on some external feature of the world.

The local determination presented by the strong supervenience claim contrasts not only with weak supervenience, but also with the kind of supervenient thesis suggested by Lewis, Jackson and Haugeland. Kim refers to this position as "global supervenience"[10]. In a general characterization, the physicalist global supervenience claim asserts that any world that is physically indiscernible from the actual world is indiscernible in respect to the distribution of its *prima facie* non-physical entities.

There is an extensive and demanding literature on how the three mentioned formulations of the physicalist supervenience claim (weak, strong and global supervenience) are related. Portraying and commenting on this debate is not the aim of this chapter (for an overview see McLaughlin & Bennett 2011, p. 28-33). This becomes unimportant given the compelling reasons for

[9] This specification of the physicalist supervenience claim is based on a formulation of strong supervenience originally suggested by Brian McLaughlin (in an unpublished manuscript), which was endorsed by Kim (1993, p. 81) and later became standard (McLaughlin & Bennett 2011, p. 22). The referred formulation of strong supervenience says that: "For any two worlds w_j and w_k, and for any objects x and y, if x has in w_j the same B-properties that y has in w_k, then x has in w_j the same A-properties that y has in w_k" (KIM 1993, p. 81).

[10] Initially, Kim (1993, p. 65) argued that global and strong supervenience were the same, in the sense that one would entail the other. However, as he later acknowledged, strong supervenience can be falsified by possible cases that would not falsify global supervenience (KIM 1993, p. 82f.). We can think of a world that is distinct from ours in respect to the distribution of a mental property and physically distinct only in a minimally insignificant way, e.g., the world in which I am not feeling my current headache, and in which Copacabana beach has one more grain of sand. Physicalist strong supervenience is falsified if this world is truly possible, given that my current physical properties would not determine the instantiation of my current mental properties in all possible worlds. However, global supervenience would not be falsified, given that the referred possible world is not a physical duplicate of our world.

taking all the different formulations of the physicalist supervenience claim as inappropriate characterizations of the metaphysical doctrine of physicalism.

Kim acknowledges the significant role of the physicalist supervenience claim in respect to physicalism. He presents it as "a shared minimum commitment of all positions that are properly called physicalism" (KIM 1998, p. 14f; KIM, 2005, p. 13). In other words, the truth of a dependence relation of the mental on the physical is presented as a necessary condition for the truth of physicalism. However, Kim argues, such a dependence relation is not enough to constitute a physicalist thesis, given that the truth of the physicalist supervenience claim is not sufficient for the truth of physicalism. Kim offers different reasons as evidence of this insufficiency. The reasons stand against any attempt to characterize the metaphysical doctrine of physicalism solely by means of the physicalist supervenience claim.

According to Kim (1998), the physicalist supervenience claim does not represent a commitment only to different theses of physicalism, but might also be a commitment to certain forms of ontological dualism, namely emergentism and epiphenomenalism. In a very general characterization, emergentism is the view that mental states (and possibly other *prima facie* non-physical entities) are produced by physical entities, but differ from them, in the sense that they have "nonphysical intrinsic causal powers" (KIM 1998, p. 12). Epiphenomenalism is the thesis that mental states (or the *prima facie* non-physical, in general) are distinct from the physical, in the sense that they are caused by the physical, but do not cause any physical effect[11]. Kim argues that if the physicalist supervenience claim is a commitment to all these different positions regarding the relation of the physical with the mental, then "[…] it cannot itself be a position […] that can be set alongside these classical alternatives" (KIM 1998, p. 12f.).

In order to oppose the view that the metaphysical doctrine of physicalism can be characterized solely by means of the physicalist supervenience claim, it is not necessary to go as far as revealing that emergentism and epiphenomenalism are committed to such a supervenience claim. Revealing the compatibility of the different formulations of physicalist supervenience claims with one of these dualist (or pluralist) theses would suffice. I argue in

[11] Even though physical entities are said to be the causes of emergent and epiphenomenal entities, the latter cannot be considered as being derivatively physical, in the sense discussed in the first section of this paper. This is justified by their very peculiar nature: emergent entities have nonphysical causal powers, while epiphenomenal entities have no causal powers at all. Thus, emergentism and epiphenomenalism are not physicalist theses.

favor of this compatibility by showing that the putative truth of some forms of epiphenomenalism or emergentism would not falsify the weak, strong and global supervenience claims.

Consider the circumstances in which different versions of the physicalist supervenience claim can be falsified. The claim that mental properties weakly supervene on physical properties is falsified if it is possible that two individuals in the actual world differ in respect to mental properties, but not in respect to physical properties. The strong supervenience of the mental on the physical is falsified if it is possible that two individuals in any different possible worlds differ in respect to mental properties, but not physically. The physicalist global supervenience claim is falsified if a minimal physical duplicate of our world (to which no further entity can be added) is not a duplicate of our world in all other respects. I argue that some forms of epiphenomenalism or emergentism do not imply the possibilities that would falsify the different supervenience claims. Thus, dualism (or pluralism) is revealed as being compatible with the mental being weakly, strongly or globally supervenient on the physical.

In respect to the weak supervenience claim, the mentioned conclusion follows from the possibility of certain scenario in which epiphenomenalism is true. Consider the following circumstances in which M is an epiphenomenal mental property: Occurrences of a physical property O (for instance, tissue damage) might be the sole cause, by nomological necessity, of instantiations of the mental property M (pain in humans); occurrences of O might invariantly cause occurrences of M and of the physical property P (C-fiber stimulation); M is epiphenomenal, while P causes occurrences of the physical type Q (winces and groans).

These circumstances are not only compatible with the claim that M weakly supervenes on P, but imply its truth. If O is the only possible cause of M, and if O invariantly causes M and P, then every instantiation of M is invariantly accompanied by nomological necessity by an instantiation of P. Consider a scenario where the circumstances in which M is said to be epiphenomenal generalize to all mental properties. In this scenario, all instantiations of mental properties share a common cause with occurrences of specific physical types, with which they are invariantly co-instantiated by nomological necessity, but, in contrast to which, they do not cause physical effects. In this scenario, not only epiphenomenalism, but also the physicalist weak supervenience claim is true. Thus, the physicalist weak supervenience claim is compatible with the form of dualism or pluralism known as epiphenomenalism.

The scenario described above does not imply the strong supervenience of the mental on the physical. If it were actual, epiphenomenalism would be true, while the physicalist strong supervenience claim could still be false. The way in which M is said to be epiphenomenal is compatible with possibilities that would make strong supervenience of M on P false, despite the truth of weak supervenience. In other possible worlds, because of different laws of nature or other external features of these worlds, occurrences of M might not be correlated with occurrences of P. We can think of worlds in which M is caused by O, but P is not, or worlds in which M is caused by another physical cause, while P is caused by O. Consider again the scenario described above, in which all mental properties are epiphenomenal in the way that M is said to be epiphenomenal. Based on the conclusions reached in regard to the individual case of M, we have reason to argue that the mentioned scenario does not imply the physicalist strong supervenience claim. However, this does not mean that epiphenomenalism falsifies it either. It means only that we are unable to argue in favor of the compatibility of these two positions by an appeal to that scenario.

In the literature, criticisms of the attempt to formulate theses of physicalism by means of the supervenience claim usually emphasize its compatibility with emergentism (HORGAN 1993, p. 559f; WILSON 2005, p. 438). In order to reveal the compatibility of the physicalist strong supervenience claim with emergentism, it might be fruitful to consider another thesis, with which the former is also said to be compatible. A version of type physicalism that asserts necessary type identities between the *prima facie* non-physical and the strictly physical not only resembles the physicalist strong supervenience claim, its truth guarantees the necessary relations between physical and mental properties postulated by the physicalist strong supervenience claim. If that form of type physicalism is true, then any two individuals, in any possibly worlds, cannot differ in some mental respect without differing in some physical respect. Thus, the physicalist strong supervenience claim would also be true.

Type physicalism is clearly incompatible with emergentism. As characterized above, emergentism is the view that mental states (and possibly other *prima facie* non-physical entities) are produced by physical entities, but differ from them, in the sense that they have causal powers that physical entities lack. For this reason, the compatibility of the physicalist strong supervenience claim with type physicalism cannot justify the assertion that the former is

compatible with emergentism. However, I think that a general sufficient condition for compatibility with the physicalist strong supervenience claim can be recognized in the former case. After specifying this condition, we may ask whether a version of emergentism can satisfy it.

The version of type physicalism described above is compatible with the physicalist strong supervenience claim because it postulates that *prima facie* non-physical properties are necessarily identical to strictly physical properties. By definition, this sufficient condition of compatibility cannot be satisfied by any form of emergentism. However, we might obtain a more general sufficient condition of compatibility if we abstract away the characterization of the nature of the relation that constitutes the identity thesis. Instead of characterizing the relation between *prima facie* non-physical properties and strictly physical properties as a relation of necessary identity, we could just characterize it as a relation of necessary covariation. This step is motivated by a feature that some authors have associated with attempts to characterize physicalism solely on the basis of a supervenience claim. It has been argued that these attempts are appealing mostly because they would not be subject to the strong commitments to identity relations that characterize the identity-based theses of physicalism. Accordingly, we conclude that a thesis is compatible with the physicalist strong supervenience claim if it guarantees a necessary covariation between *prima facie* non-physical properties and physical properties.

As in the case of physicalism, there are also various theses that have been called emergentism. It is not the aim of this paper to describe them or to take any stance in respect to which of them ought to be considered appropriate[12]. The question that concerns me here is whether some genuine version of emergentism guarantees a necessary covariation between *prima facie* non-physical properties and physical properties. Interestingly, a conception of emergentism based on the notion of supervenience has been acknowledged as the most "widespread understanding of ontological emergence" (O'Connor & Wang 2012, p. 19). James Van Cleve (1990, 1990, p. 222) seems to have brought this thesis (which he attributes to C. D. Broad) to contemporary debates on the philosophy of mind. He formulates it as follows: "If P is a property of w, then P is emergent iff P supervenes with nomological necessity, but not with logical necessity, on the properties of the parts of w."

According to Jessica Wilson (2005), Van Cleve's conception of emergentism might guarantee, with a further specification, the necessary

[12] O'Connor & Wong (2012) offers an overview and appraisal of various conceptions of emergentism.

covariation that is sufficient for the strong supervenience of the *prima facie* non-physical on the physical. Wilson claims that the role-played by natural laws (which cover emergent laws) in determining the nature of things governed by these laws might be more significant than usually acknowledged. According to her, "[…] there are good philosophical and scientific grounds for thinking that the natures of the entities under discussion in the physicalism debates indeed depend on the actual laws of nature" (WILSON 2005, p. 437). The thesis that Wilson and others call "necessitarianism about laws" asserts that any possible world in which an entity of a certain kind is instantiated is a world that has "all the laws actually governing [entities of that kind]" (WILSON 2005, p. 437f.).

Van Cleve's conception of emergentism argues for a supervenience relation that would hold with nomological necessity between an emergent property and its base. If necessitarianism about laws is true, the nomological necessity of the emergent supervenience relation guarantees the necessary covariation postulated by the physicalist strong supervenience claim. As described above, the physicalist strong supervenience claim states that any two individuals inhabiting different worlds are necessarily indiscernible in respect to *prima facie* non-physical properties if they are indiscernible in respect to their physical properties. If necessitarianism about laws is true, then any world that has an entity of a certain kind also has the laws that govern entities of this kind in the actual world. Any kind of entity whose existence in the actual world depends on emergent laws will only be instantiated in worlds in which the same emergent laws hold and the physical base is instantiated. Thus, the physicalist strong supervenience claim proves to be compatible with a conception of emergentism.

The physicalist global supervenience claim is also compatible with dualism (or pluralism, if we take the *prima facie* non-physical to include more than mental states). A physical duplicate of our world is a world in which every physical entity of the actual world is instantiated according to the same pattern of distribution. A physical duplicate is minimal if nothing else is added, or, in Lewis' formulation, "no natural properties alien to our world are instantiated." The physicalist global supervenience claim is falsified if a minimal physical duplicate of our world is not a duplicate in all other respects. I argue below that neither emergentism nor epiphenomenalism implies that a minimal physical duplicate of our world would not be a duplicate *simpliciter*. Epiphenomenal and emergent entities are conceived as being

caused or produced by physical entities. If they exist, their existence is due to physical entities of the actual world. If epiphenomenalism or emergentism is true, a minimal physical duplicate of the actual world is expected to cause or produce the same non-physical entities that make one of the mentioned forms of dualism or pluralism true. A minimal physical duplicate of our world would be inhabited by the same epiphenomenal or emergent entities of the actual world, and would be a duplicate *simpliciter* even if epiphenomenalism or emergentism were true. Thus, physicalist global supervenience fails as an attempt to characterize the metaphysical doctrine of physicalism.

Kim (1998) presents an associated reason why none of the specific forms of the physicalist supervenience claim should be considered as a thesis that appropriately characterizes the doctrine of physicalism. Kim (1998, p. 14) states that "[the thesis of] supervenience is silent on the nature of the dependence relation that might explain why the mental supervenes on the physical". The two reasons are associated because the compatibility of the physicalist supervenience claims with forms of dualism is allowed by the failure of these claims to explain why the postulated dependency relation of the mental on the physical occurs.

A further reason for rejecting a characterization of the metaphysical doctrine of physicalism that is solely based on the relation of supervenience is given by what has been known as "Kim's causal exclusion argument." Its conclusion presents the entities that supervene upon the physical, but are not identical with the physical, as either epiphenomenal or sources of overdetermination. Overdetermination is usually characterized as a causal relation between an effect and two or more independent sufficient causes. It is a rare phenomenon that cannot be thought to occur every time pairs of beliefs and desires cause bodily movements. Therefore, the acknowledgment of one of the physicalist supervenience claims, but not of an identity-based thesis of physicalism, implies that the mental (or the *prima facie* non-physical, in general) is epiphenomenal.

The first premise of Kim's causal exclusion argument is the principle of the causal closure of the physical world. In a very explicit and clear formulation, it says that: "Every physical effect has an immediate sufficient physical cause, in so far as it has a sufficient cause at all" (PAPINEAU, 2009, p. 59; see also KIM 2005, p. 15).

The principle of the causal closure of the physical world has already figured in Lewis' causal argument in favor of the identity of the mental and the physical. Lewis (1966, p. 23) presents it as "a traditional and definitive working hypothesis of natural sciences"

If the physical world is causally closed, then any physical entity or, more specifically, any physical event that is allegedly caused by an antecedent supervenient mental state would seem to have two independent sufficient causes (PAPINEAU, 2009, p. 61). There would be a sufficient physical cause, as the thesis of the causal closure of the physical world professes, and the alleged mental cause. According to the causal closure of the physical world, supervenient mental states would also seem to have at least two causes, if they have any sufficient cause at all. Consider an occurrent thought M (for instance, that Socrates is mortal) and another, antecedent thought M', which might be said to be the cause of M (the occurrent thought that Socrates is just a man). If the mental supervenes on the physical, then M supervenes on a physical entity P. According to causal closure, if P has a sufficient cause at all, it has a sufficient physical cause P', which would also cause M, since, according to the supervenience claim, M covaries with P. In this scenario, M would be sufficiently caused both by M' and P'.

The second premise of Kim's causal exclusion argument, namely, the metaphysical principle of causal exclusion, makes the claim of two independent sufficient causes unacceptable. Kim (2005, p. 17) characterizes this principle as follows: "If an event e has a sufficient cause c at t, no event at t distinct from c can be a cause of e (unless it is a genuine case of causal overdetermination)".

As I argued above, cases of overdetermination are rare. An example would be the death of a person simultaneously caused by poisoning and a gunshot. The rareness of such events does not allow us to conceive the numerous cases of mental causation as "genuine cases of overdetermination."

The causal exclusion argument leads to the conclusion that mental states must be identical to the physical entities on which they supervene in order to be causally efficacious. However, my intention in presenting and investigating Kim's causal exclusion argument was not to defend an identity-based thesis of physicalism. Rather, I intended to show that, when it is not complemented by another thesis, a physicalist supervenience claim is problematic, in the sense that it implies the extremely counterintuitive thesis of epiphenomenalism.

3 Realization physicalism

The present section investigates the adequacy of another major attempt to characterize physicalism. Like the physicalist supervenience claims, realization physicalism explicitly denies the commitments to identity relations that constitute type and token physicalism. In a general characterization, it asserts that everything there is is either strictly physical or is realized by what is strictly physical.

Attempts to conceive physicalism by means of the notion of realization have been intensely pursued after the widespread acknowledgment of the problems associated with supervenience-based attempts. In a certain sense, it is correct to describe realization physicalism as a response to problems that cause the failure of supervenience-based attempts to characterize physicalism. This statement is supported by claims of some of its proponents. Kim emphasizes that realization physicalism explains the supervenience relation of the mental on the physical (KIM, 1998, p. 24; see also MELNYK, 2003, p. 52f.)[13]. Andrew Melnyk argues that realization physicalism provides a superior alternative to supervenience claims. Sidney Shoemaker emphasizes that it overcomes the threats of epiphenomenalism and overdetermination of *prima facie* non-physical entities (SHOEMAKER, 2007, p. 13).

Shoemaker (2007, p. 10f.) attributes the origins of realization physicalism to the difficulties faced by type physicalism, most specifically the multiple realizability argument. Remarks about the origins of this attempt to characterize physicalism indicate the aims that its proponents expected to accomplish. This thought determines the form and the aims of the present section. After presenting realization physicalism and elucidating its main elements, I investigate whether it appropriately characterizes physicalism by considering two aspects. Firstly, whether it offers responses to problems that made us abandon supervenience-based attempts. Secondly, whether realization physicalism is not an identity-based thesis in disguise.

There is more than one conception of realization physicalism. However, a general characterization can be obtained by considering common features of different conceptions. The investigation that constitutes this section is mostly based on conceptions of realization physicalism formulated by Melnyk in *A Physicalist Manifesto* (2003) and by Shoemaker in *Physical Realization* (2007).

[13] Remember that Kim (1998) describes the lack of a proper explanation of the supervenience relation as the source of its compatibility with the different physicalist and dualist theses.

Despite differences between the two conceptions, I refer bellow to a singular thesis of realization physicalism to suggest that their general features constitute a unified core.

A significant feature of realization physicalism is its strong association with a conception of functionalism about mental states that is known as the functional state identity claim[14] (BLOCK, 2007, p. 38). According to this view, mental states are identical with functional states. What makes something a mental state of a determinate type is its functional role, which is specified as the production of certain effects, typical effects, if events of determinate kinds, typical causes, occur. This view about the nature of mental states contrasts with the functionalist specification claim, which identifies mental states with the things that play the functional roles, i.e. what is caused by the typical causes and is the cause of the typical effects. The functionalist specification claim figures as a fundamental element of Lewis' defense of type physicalism. Realization physicalism contrasts with any attempt to characterize physicalism on the basis of the functionalist specification claim by avoiding the strong commitment to identity relations that this functionalist view demands[15].

Although functionalism was originally a position about the nature of mental states, it does not prevent the formulation of a more comprehensive form of functionalism, which identifies all the different kinds of *prima facie* non-physical entities with functional roles. Melnyk explicitly endorses this generalization (2003, p. 8f.). Shoemaker (2007) defends a subtler alternative, according to which properties (or kinds of things) are not necessarily identical with functional roles or causal profiles. The alternative view consists in the weaker claim that, "[…] in the actual world, and worlds nomologically like it, having that causal profile is sufficient for being that property" (Shoemaker

[14] Kim conceives the putative realization of mental states by physical entities as a realization of second order properties by physical entities playing determinate functional roles (Kim 1998, p. 19). Melnyk asserts that realization physicalism should be conceived as "a generalization [...] of psychofunctionalism" (Melnyk 2003, p. 7f.).

[15] Melnyk's conception of functionalism also contrasts with the one proposed by Lewis in another respect. Melnyk argues that the functional roles he identifies with mental types cannot be discovered by means of conceptual analysis. In his view, "[s]tatements reporting the requisite identities, if discoverable at all, will only be discovered a posteriori, nondemonstratively inferred from empirical premises" (Melnyk 2003, p. 35). In another passage, he claims that "such identities will presumably be a posteriori, to be discovered empirically if at all, and hence not knowable on the strength of conceptual or linguistic competence alone" (Melnyk 2003, p. 55). See Gouvea (2012) for a discussion of the role of conceptual analysis for the specification of functional roles.

2007, p. 5). According to both forms of functionalism, the nature of *prima facie* non-physical entities is specified by their functional roles.

After recognizing the role of functionalism in the formulation of realization physicalism, the notion of realization can be appropriately elucidated. The *relata* of realization relations are tokens, i.e. concrete instances, of different types[16]. The relation of realization is established when a token of a certain type plays the functional role or has the causal profile that specifies some other type and, thus, instantiates a token of the latter. The realization relation has been described as a relation of necessitation (MELNYK 2003, p. 31f.). If a token of a certain type plays the functional role that specifies some other type, a token of the latter type is necessarily instantiated[17]. It is important to notice that the realization relation is not causal, but a relation of constitution (MELNYK 2003, p. 20 note 15; Shoemaker 2007, p. 10). This becomes clear if we consider that the realizer token is not expected to antecede the realized token, but rather to occur simultaneously. According to the characterization of the notion of realization, we are able to formulate realization physicalism as follows: it is the thesis that *prima facie* non-physical tokens are necessarily realized by strictly physical tokens, when (i.e., simultaneously) the latter play the functional roles that specify the former.

The notion of realization, which is conceived as a consequence of the performance of a functional role, guarantees a retentive or conservative attitude (in contrast to an eliminativist attitude) towards the *prima facie* non-physical entities. On the one hand, realization physicalism is not committed to the existence of things that seem to exist, but do not seem to fall under the notion of the strictly physical, but on the other, it is also not committed to their non-existence. According to realization physicalism, *prima facie* non-physical entities exist if there are tokens of strictly physical types that perform the specific functional roles identified with the types of *prima facie* non-physical entities. If the functional role of one of these types is not performed by any physical token, then, despite appearances, entities of this type are said not to exist. It must be emphasized that a physical realization relation is said to occur only if a functional role is in fact performed by a physical token. A relation of physical realization does not accompany every instantiation of a physical type whose tokens usually perform a specific functional role. It only accompanies

[16] See Melnyk (2003, p. 20) and Shoemaker (2007, p. 3).

[17] This aspect of a realization relation can also be described in terms of sufficient conditions. Shoemaker, for instance, asserts that "X realizes Y just in case the existence of X is constitutively sufficient for the existence of Y" (2007, p. 4).

instantiations of a physical type that actually perform the respective functional role. Shoemaker (2007, p. 21) offers a nice illustration of this point, in which he claims "C-fiber stimulation in a Petri dish will not realize pain, or any other mental state".

The performance of a functional role by a token of a physical type depends on the instantiation of other physical tokens, as well as on physical laws. Although realization is conceived as a relation between a token that is realized and a token that performs a functional role, the realization base must be much larger. Proponents of realization physicalism all acknowledge this condition. Kim (1998, p. 22) argues that the realization of a mental state "depends on the nature of the system in which [the physical token realizer] is embedded". He also emphasizes its dependency on the laws that govern the causal relations between the physical realizer and the elements of the functional role that is performed, i.e. the typical causes and effects (KIM 1998, p. 23). Melnyk distinguishes the narrow realizer of a *prima facie* non-physical token from the broad and broader realizers (MELNYK, 2003, p. 29). The narrow realizer is the physical token that performs the functional role. The broad and broader realizers are, respectively: the external physical conditions (other physical tokens) in addition to the narrow realizer; and physical laws in addition to the broad realizer. The external physical conditions and physical laws that compose the broad and broader realizer are necessary conditions for the performance of the functional role by the narrow realizer. Shoemaker distinguishes the total realizer, which is the sufficient condition for realization, from the core realizer, which is a salient part (SHOEMAKER, 2007, p. 21). Although the realization base reveals itself to be much larger, there is a reason for discriminating and attributing special status to the physical token that performs a functional role. The other components of the broader or total realizer, which Shoemaker (2007, p. 21) calls "surround", constitute a background that remains more or less the same. The occurrence of the physical token that plays the functional role is what makes the difference for the realization of a simultaneous token of another type. It is, as Shoemaker says, a salient feature of the total realizer.

At this point, the present section turns to an investigation of whether realization physicalism is a metaphysical thesis that appropriately characterizes the doctrine of physicalism. Proponents of realization physicalism conceived it as an identity-independent thesis that overcomes the problems affecting supervenience-based attempts. I try to ascertain whether some conception of

realization physicalism really accomplishes the aim its proponents had in sight. If it does, I argue we have enough evidence to consider realization physicalism, together with type and token physicalism, as an appropriate characterization of the metaphysical doctrine of physicalism.

In the last section, I argued that physicalist supervenience claims fail to characterize physicalism appropriately. Three reasons were given to justify this view. Firstly, physicalist supervenience claims leave the supervenience relation unexplained. Secondly, they are compatible with forms of dualism or pluralism (epiphenomenalism or emergentism). Thirdly, they imply that *prima facie* non-physical entities would be either epiphenomenal or sources of overdetermination.

Kim (1998) argues that realization physicalism explains how the supervenience of the *prima facie* non-physical on the physical might occur. The explanation derives from the fact that realization physicalism entails a physicalist supervenience claim. If *prima facie* non-physical types are functional roles, and *prima facie* non-physical tokens are realized by the physical tokens that perform these functional roles, then two individuals cannot differ in some *prima facie* non-physical respect if they do not differ in some physical respect. However, not all kinds of physicalist supervenience claims could be explained in this way. The relations of realization postulated by realization physicalism depend, as seen above, on physical laws governing the causal relations that consist in the performance of functional roles. For this reason, Kim argues that realization physicalism explains the supervenience thesis that "has only the force of nomological necessity, not that of full metaphysical or logical / conceptual necessity" (KIM, 1998, p. 23f.). In other words, the truth of realization physicalism would explain a weak supervenience of the *prima facie* non-physical on the physical, but not strong supervenience. I agree with Kim in this respect. It is, however, still unclear whether the truth of realization physicalism would explain the physicalist global supervenience claim.

Melnyk denies that realization physicalism entails and, consequently, explains, the physicalist global supervenience claim as conceived by Haugeland, Lewis and Jackson. He claims that since realization physicalism

> […] entails nothing at all about how [*prima facie*] nonphysical tokens [...] are realized in other possible worlds, it does not entail, in particular, that every such token in every world indiscernible physically from the actual world be physically realized (MELNYK, 2003, p. 56).

However, Melnyk acknowledges that another formulation of the physicalist global supervenience claim is entailed by realization physicalism. According to him, realization physicalism entails the following global supervenience claim: for any possible world in which realization physicalism is true, if it is a physical duplicate of the actual world, then it is a duplicate *simpliciter* (MELNYK 2003, p. 56).

Contra Melnyk, I argue below that realization physicalism does entail and explain the physicalist global supervenience claim in its original formulation. My defense of this view is based on evidence that Melnyk's alternative formulation of the physicalist global supervenience claim is highly problematic. Instead of quantifying over all physical duplicates of the actual world, Melnyk's supervenience claim asserts that the only physical duplicates for which realization physicalism is true are duplicates *simpliciter* of the actual world. This formulation clearly distinguishes the set of possible worlds that are physical duplicates of the actual world from the set of possible worlds that are physical duplicates of the actual world in which realization physicalism is true. However, the distinction between these sets of possible worlds renders realization physicalism problematic. It implies that even if realization physicalism is true in the actual world, it can still be false in a physical duplicate of the actual world.

There seem to be two ways of explaining the possibility of realization physicalism being true in the actual world, but false in some physical duplicate of the actual world. One is to emphasize that a physical duplicate of a world is not a minimal physical duplicate. A physical duplicate of the actual world that is not minimal can have an entity, for instance a ghost that is neither physical nor realized by the physical. Thus, although the world just described is a physical duplicate of our world, realization physicalism is false there. However, this explanation is not available. Melnyk might have forgotten to formulate the physicalist global supervenience claim with a restriction or a stop clause in respect to the physical duplicates of the actual world that are expected to be duplicates *simpliciter*. In contrast, Lewis and Jackson emphasized that only the minimal physical duplicates of the actual world are expected to be duplicates *simpliciter*.

There is another way to try to explain the strange possibility of realization physicalism being true in the actual world, but false in some physical duplicate of the actual world. One could argue that the physical components of a minimal physical duplicate of the actual world do not guarantee the truth of realization physicalism. However, this implies that, if realization physicalism is true in a world (even in the actual world), it is not true due to its physical components. Contrary to this conclusion, proponents of realization physicalism should defend the position that the truth of realization physicalism in this world and any other must be due to their physical components. Realization physicalism asserts that everything there is is either strictly physical or is realized by physical tokens playing functional roles. Thus, its putative truth, explains why any minimal physical duplicate of the actual world would be a duplicate *simpliciter*.

According to Kim, the problem of the undesirable compatibility of physicalist supervenience claims with forms of dualism (or pluralism) can be solved if the supervenience relation is properly explained. I argue that the explanation offered by realization physicalism overcomes this problem.

Let us consider, first, why realization physicalism is incompatible with emergentism. There are two reasons in favor of this claim. One is that realization physicalism denies that mental states or *prima facie* non-physical entities in general could have intrinsically non-physical causal powers. The causal powers attributed to *prima facie* non-physical entities are, according to realization physicalism, due to their physical realizers. If some token of pain causes winces and groans, it is because there is a physical token performing pain's functional role. Given that pain causes winces and groans because a physical token causes them, pain's causal power cannot be intrinsically non-physical. The other reason for the incompatibility of realization physicalism with emergentism consists in the rejection of the possibility that *prima facie* non-

physical entities are instantiated by means of fundamental emergent laws (MELNYK 2003, p. 31f.).

The incompatibility of realization physicalism with epiphenomenalism is nicely demonstrated by Shoemaker. However, his argument demands some knowledge of an account of realization physicalism that might not be generally endorsed by proponents of realization physicalism. According to Shoemaker, not only kinds of *prima facie* non-physical entities, but also kinds of physical entities have causal profiles that individuate them. Based on this thesis, he formulates "the subset account" of realization (SHOEMAKER, 2007, p. 12). As a first approximation, Shoemaker (2007, p. 12) conceives the subset account of realization as follows:

> […] property P has property Q as a realizer just in case (1) the forward-looking causal features of property P are a subset of the forward-looking causal features of property Q, and (2) the backward-looking causal features of P have as a subset the backward-looking causal features of Q.

This characterization of the subset account needs some modifications to avoid the consequence of conjunctive properties being realizers of their conjuncts (SHOEMAKER 2007, p. 13). However, this initial formulation is sufficient to reveal the incompatibility between realization physicalism and epiphenomenalism.

The realization of tokens of *prima facie* non-physical types is said to be necessitated by physical tokens performing causal profiles that include as parts the causal profiles of the *prima facie* non-physical types. As an illustration, consider the types A, B, P, Q, X, Z, and interpret the symbol "→" as meaning that tokens of the type(s) mentioned before the symbol typically cause tokens of the type(s) mentioned after the symbol. Take the causal profile of P to be: A or B → P → X; and the causal profile of Q to be: B → Q → X and Z. According to the subset account, and given the configuration of the causal profiles of the types P and Q, if a token of Q performs its causal profile, a token of P is realized.

Against the objection that realization physicalism might be compatible with epiphenomenalism, Shoemaker (2007, p. 17) presents the following argument:

> If the forward-looking causal features of a realized property are a subset of the forward-looking causal features of its realizers, it stands to reason that the causal powers of an instance of the realized property will be a subset of the causal powers of the instance of the property that realized it on that occasion.

Shoemaker's argument asserts that a *prima facie* non-physical token has causal powers if its forward-looking causal features constitute a part or subset of the forward-looking causal features of its realizer. The putative causal power of the realized token is conceived as part of the putative causal power of its realizer. Given that the realizer has causal power, otherwise, the realization relation could not occur, the realized *prima facie* non-physical token also has this power.

There is still one problem concerning physicalist supervenience claims that might threaten the status of realization physicalism as an appropriate characterization of physicalism. Kim's causal exclusion argument asserts that, given the principle of the causal closure of the physical world and the metaphysical principle of causal exclusion, *prima facie* non-physical entities that are not identical to strictly physical entities must be epiphenomenal. However, as Shoemaker's argument above reveals, at least one conception of realization physicalism is not compatible with epiphenomenalism. Should the conclusion be that the *prima facie* non-physical entities realized by the strictly physical are also identical to the strictly physical? This would imply that realization physicalism is an identity-based thesis of physicalism in disguise. Against this conclusion, Shoemaker argues that realization physicalism is indeed independent of the strong commitment to identity relations of type and token physicalism. According to him, the causal efficacy of *prima facie* non-physical entities does not depend on a putative identity with physical entities (SHOEMAKER 2007, p. 17).

Shoemaker's response to Kim's causal exclusion argument presents the effects caused by *prima facie* non-physical entities as products of overdetermination. However, he claims, "this is not overdetermination of an objectionable sort" (SHOEMAKER 2007, p. 53). The kind of overdetermination that the metaphysical principle of causal exclusion rejects presents two completely independent sufficient causes. The kind of overdetermination that is expected to follow from the attribution of causal powers to realized *prima facie* non-physical entities also presents two

causes, but one is part of the other. Shoemaker (2007, p. 53) illustrates this conception of overdetermination by suggesting that we consider the following case: "we can say that Smith's death was caused by the salvo of shots fired by the firing squad and that it was caused by the shot fired by Jones, where Jones' shot was the only member of the salvo that hit Smith". Thus, there are good reasons to acknowledge realization physicalism, together with token and type physicalism, as an appropriate characterization of the metaphysical doctrine of physicalism.

Conclusion

The paper evaluated theses that were formulated and proposed as identity-independent characterizations of physicalism, namely physicalist supervenience claims and realization physicalism. After elucidating the different physicalist supervenience claims (based on weak, strong and global supervenience), I argued that none of them constitutes an adequate characterization of physicalism. Three reasons were given in favor of this conclusion: their compatibility with forms of dualism (or pluralism); the fact that the supervenience relation is left unexplained; and Kim's causal exclusion argument, which asserts that merely supervenient entities (i.e., ones that are not identical to strictly physical entities) must be epiphenomenal. The last section of the paper revealed and discussed common and distinct features of different formulations of the realization physicalism proposed by J. Kim, A. Melnyk, and S. Shoemaker. In conclusion, I argue that realization physicalism fares better as a candidate for characterizing physicalism, since it avoids problems that render supervenience-based attempts inadequate.

GOUVEA, R. A. S. Fisicalismo sem identidade. *Trans/form/ação*, Marília, v. 43, n. 2, p. 253-280, Abr./Jun., 2020.

Resumo: O artigo apresenta e discute as tentativas mais influentes de caracterizar o fisicalismo sem postular relações de identidade entre o que é físico e o que é *prima facie* não físico. A primeira seção trata da possível crítica de que essas tentativas são equivocadas, porque contradizem o bordão fisicalista "tudo o que existe é físico". Na segunda seção, elucido as diferentes formulações da tese fisicalista da superveniência, e argumento que nenhuma delas consiste em uma caracterização adequada do

fisicalismo. Três razões são oferecidas em favor dessa conclusão: sua compatibilidade com formas de dualismo (ou pluralismo); o fato de que a relação de superveniência é mantida sem explicação; e o argumento de Kim da exclusão causal, segundo o qual entidades meramente supervenientes (i.e., aquelas que não estão em relações de identidade com entidades estritamente físicas) devem ser epifenomenais. A terceira seção apresenta os aspectos gerais de outra tentativa de caracterizar o fisicalismo independente da identidade, a saber, o fisicalismo de realização. De acordo com essa posição, ocorrências de tipos *prima facie* não físicos são realizadas por ocorrências de tipos físicos quando estes executam os papéis funcionais que especificam a natureza dos primeiros. A terceira seção também revela como o fisicalismo de realização lida com as objeções que tornam as teses fisicalistas da superveniência inadequadas para a caracterização do fisicalismo.

Palavras-chave: Fisicalismo. Identidade. Superveniência. Funcionalismo. Realização.

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