different from the way M_H and M_L interact or SR cannot characterize for-meness. According to SR, a mental state is conscious if it is a complex that satisfies some further condition (one proper part represents the other) but unless we are given reasons why a phenomenal conscious state like M is a complex and M_{NC} is not, SR cannot be considered an account of subjective character, for it fails to explain in virtue of what a mental state is a phenomenally conscious mental state. In chapter 7, Kriegel hypothesizes that M^* and $M^{\Diamond}$ are connected via synchronization of their firing rates. Unfortunately for SR connection via synchronization of their firing rates seems not to be exclusive of phenomenally conscious states. There is empirical evidence suggesting, for instance, that synchronous neurological oscillations are a plausible mechanism of medial prefrontal cortex driven cognitive control independent of consciousness. If M_H and M_L are connected via synchronization of their firing rates, then M_H and M_L are connected the same way that M^* and $M^{\Diamond}$ and it still has to be explained why M but not M_{NC} is a complex.

Kriegel's book is engaging and clear despite the elusiveness of some of the notions involved. It offers conceptual tools and arguments worthy of serious consideration for further research and, although the theory has some important elements that require further elaboration, it presents a compelling alternative in the current debate among theories of consciousness. I strongly recommend this book to anyone interested in the philosophy of mind and in consciousness in particular.

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This book belongs to the series "New problems of philosophy", edited by José Luis Bermúdez. According to the editor, the aim of the series is to provide a clear starting point for the study of a topic of huge but

recent philosophical interest in such a way that it becomes both accessible to undergraduate students and of interest to professionals. And there is little doubt that Stoljar has written this work having clearly in mind this overall aim.

First, there are many formal aspects of the book that make it reader-friendly: chapters are not long (seventeen pages is the average length); the book is written in short paragraphs; there are no footnotes in the text. Second, contents also follow this same concern: no single philosophical position or notion is presupposed; there is a glossary of key technical terms at the end of the book; each chapter ends with a short summary and a selection of bibliographical recommendations; the argument proceeds slowly, especially in the opening chapters; there are useful recapitulations along the way; key philosophical arguments are presented in such a way that both premises and conclusion are explicitly displayed.

Leaving aside the introduction and a first preliminary chapter, the book can be divided into three clear-cut parts:

(1) Chapters 2-5 discuss the first problem of formulation of physicalism.
(2) Chapters 6-8 discuss the second problem of formulation of physicalism.
(3) Chapters 9-11discuss the status of physicalism in light of the (skeptical) results of the previous two parts.

For those ignoring the terminology here, let me make clear what is meant by the first and second problems of formulation of physicalism. Nowadays physicalism is understood as a metaphysical thesis (it is noteworthy that it was not so understood during the times of the Vienna Circle, when the term 'physicalism' was introduced in the philosophical lore –incidentally, Stoljar makes some concise but useful historical remarks about the thesis of physicalism, mainly in the first chapter) roughly stating that every empirical entity is, or is determined by, a physical entity. This is of course very rough and vague until one makes clear what are the fundamental physical entities in question and in what consists the relation of metaphysical determination. The first task is what I'm referring to as first problem of formulation; the second, of course, is the second problem of formulation. As it happens, these two allegedly preliminary questions have proved hard to deal with. In fact, most of the recent philosophical

literature arguing for physicalism actually deals with one or both problems of formulation.

It bears mention that Stoljar, our Virgil leading us through the depths and complexities of this new and important philosophical problem of physicalism, happens to be an outright skeptic about the view. His conclusion after discussing the first problem of formulation could not be more appalling for the physicalist, I quote: "there is no version of physicalism that is both true and deserving of the name" (p. 90). And the conclusion of the third part is that physicalism does not play any crucial role in the main philosophical problems and arguments where it is usually thought to be involved, mistakenly so, of course, according to the author. So this is indeed good news for the philosopher who tries to make sense of all these recent metaphysical discussions but has serious doubts about the cogency of the physicalist thesis. But it could not be worse for the physicalist-minded philosopher: in a nutshell, the general conclusion of the book is that physicalism is a red herring in many contemporary discussions in philosophy of mind, metaphysics and philosophy of science.

This is however a clever book. In spite of his overt skepticism, Stoljar manages to write the book in such a way that, as he unfolds his critical argument, he reviews most of the relevant philosophical literature on physicalism. Moreover, he proves able to do so without dwelling on too many details or ramifications of the discussions, which would no doubt make the book much longer and hard to read for undergraduates, and therefore unfit for the overall aim of the series.

However skilled and praiseworthy is the presentation, it also has, inevitably, its drawbacks. For instance, after concluding, at the end of chapter 4, that no version of physicalism is both true and deserving of the name, one wonders, from a purely dialectical standpoint, why should we indulge in another row of four chapters dealing with the problem of formulating physicalism, once we are told this is a hopeless enterprise.

As a philosopher sympathetic with physicalism, there is a wealth of points of discussion and criticisms I'd like to raise about Stoljar's skeptical argument, but space limitations recommend austerity here. I shall therefore be content if I raise some points concerning the three main parts of the book. In doing so, I hope I will give the reader at least an inkling of the bulk of Stoljar's case against physicalism, as well as, hopefully so, point to some possible philosophical leaks in the

argument which the physicalist may well use to escape Stoljar's severe verdict.

Let us first concentrate on Stoljar's discussion of the first problem of formulation. In fact, this is the crucial part of his argument. Stoljar's method here does not depart from that of physicalist philosophers. The aim is to find a characterization of the basic physical entities which renders a thesis which is plausible and can be properly called physicalist. And the way of doing so is to consider possible worlds or scenarios in which intuitively physicalism is correct and others in which it looks false. The alleged formulation of physicalism should then accord well with these intuitions: namely, should come out true for the first type of possible scenarios and false for the second.

As an illustration of this way of proceeding, consider an elucidation of 'physical' according to which by that term we understand the sort of entities which feature in commonsense physics, like body, mass, and so on. The reason to discard this as part of a good elucidation of physicalism is that the resulting thesis comes out false in a possible world in which all empirical entities are, or are determined by, the entities introduced by current theories in physics, things like spin or charge. This is so because these are definitely not entities belonging to commonsense physics. Yet, this is a possible world in which physicalism seems to be true. If in the actual world things where as described in this scenario, we would then think that physicalism is a true thesis. The fact that many physicalists take this possible world as being pretty close to the actual one only makes things worse.

A natural move for the physicalist is precisely that of elucidating the basic physical entities as those introduced by current physics (see Melnyk 2003) or a suitable improvement of it (Lewis 1994). Stoljar uses then the same method to discard also this other possible elucidation: he devises a possible world for which the elucidation comes out false while intuitively, he claims, it looks like a physicalist scenario. This is what he calls the "Twin Physics World" (p. 77). This is supposed to be a world in which "every property is necessitated by twin-mass, twin-charge and twin-spin", where these basic properties are "assumed to be of a quite different character to mass, spin and charge" and furthermore they are not "spiritual nor mental nor conform to any paradigm we have of a non-physical property".

Now, it is clear that the formulation of physicalism favored by Melnyk or Lewis comes out false for this Twin Physics world. The crucial question for this formulation is therefore whether physicalism should be judged as being true in the Twin Physics World or not. And Stoljar answers unhesitatingly in the affirmative. He seems quite confident with this verdict (which, as I read his overall case against physicalism, becomes absolutely crucial for his argument), so much so that he only offers a consideration, not a full-fledged argument for it. This consideration is that "physicalism is supposed to be an abstract account of the world, not tied to details of any particular physical theory" (p. 78). Yet I'm afraid that a philosopher like Melnyk would certainly object to it.

To see why, let us follow Stoljar's argument one step further. Given that a formulation like Melyk's (or Lewis') is to be abandoned since it allegedly renders the wrong result with respect to the Twin Physics World, it follows according to Stoljar that we need a "more abstract" formulation, one which is compatible with such a world. Stoljar's suggestion in this regard is what he calls "the possibilist version of the Theory View", which holds that "F is a physical property if and only if F is expressed by a physical theory that is true at some possible world or other" (p. 75). So the formulation of physicalism proposed will state that every property is or is determined by physical properties in the sense of the possibilist version of the Theory View (for reasons I cannot dwell into, Stoljar favors formulations of physicalism in terms only of properties and not of entities of other ontological categories).

Once we concede to Stoljar this move to the "possibilist version of the Theory View" formulation of physicalism, we are only one step away from his skeptical conclusion, since this formulation will certainly prove to be too liberal as it is compatible with overtly antiphysicalist scenarios, such as those in which everything is determined by entities introduced by some future physics which includes consciousness as one of the basic entities.

Yet, as announced, I think there is good reason to resist Stoljar's move to "possibilist physicalism" (let us call it so by way of abbreviation). Stoljar is well aware that physicalism is intended to be a contingent thesis, and this thought will certainly loom large in his discussion of the second problem of formulation, along chapters 6 to 8 (incidentally, chapter 7 contains a very clear and useful discussion of the intricate issue of the modal status of physicalism). But, during his

discussion of the first problem of formulation, he seems however to overlook that physicalism is also intended to be an empirical thesis, in the sense that it is intended to be a thesis for which we have not merely possible but actual empirical evidence. In other words, the physicalist's reasons, her reasons to defend physicalism, are empirical reasons in the first place.

Now one wonders what kind of empirical evidence we have for a thesis formulated as possibilist physicalism. What sort of actual empirical evidence might we have concerning entities for which we do not have the slightest notion? This is why I'm afraid that a philosopher like Melnyk would, pace Stoljar, refrain from accepting a formulation such as possibilist physicalism and would instead happily accept a formulation of physicalism which is incompatible with the Twin Physics World.

Still, one can find this move also undesirable, and think that something like Twin Physics World should be a physicalist world after all. One could also endorse Stoljar's view that physicalism should not be conceived as a thesis inextricably tied to a particular physical theory. But we should bear in mind that whatever formulation of physicalism we propose which honors these considerations should be a thesis for which certain actual empirical evidence can be provided. This is certainly not a simple task, and seems to trap us in the two horns of the notorious Hempel's Dilemma. So it is Stoljar's inference from the truth of physicalism in the Twin Physics World to possibilist physicalism which looks problematic to me.

In chapter 5 of his book, Stoljar argues that his skeptical argument is actually stronger and better than Hempel's Dilemma. For the reasons just unveiled, I think that precisely the opposite is actually the case. The problem in a nutshell is to find a formulation of physicalism abstract enough, to use Stoljar's words, but also one for which actual empirical evidence can be provided. I myself have suggested a formulation of physicalism which partly rests on a mereological principle according to which properties of wholes are determined by properties of their constituents. The key here is that we seem to have a wealth of empirical evidence for such a general principle (for details, see Pineda 2006).

Let me now say something about Stoljar's discussion of the second problem of formulation. The treatment given in the book to the recent work on the notion of realization is simply too cursory. Stoljar is simply not interested in this. Maybe a good indication of this is the

persistent mistake in the description of Shoemaker's analysis of realization. This occurs twice in the book (on pages 125 and 155) and in both cases it is said that, according to the analysis, the causal powers of the realizer are included in the causal powers of the realized, when in fact it is the other way around. Also the discussion of the functional analysis of realization, defended by Melnyk among others, on pages 123-4, is too quick to say the least.

This dismissal of what many physicalist-minded philosophers take to be the most novel and interesting work on the matter in recent years is symptomatic, I think, of an aspect of Stoljar's conception of the thesis of physicalism which is open to critique. Let me explain.

Stoljar defends that the notion of physicalist determination should simply be elucidated as that of metaphysical necessitation. So according to this what the physicalist has in mind is roughly that for every property F instantiated at the actual world, there is some physical property G instantiated at the actual world such that, for all possible worlds w, if G is instantiated at w, then F is instantiated at w (p. 112). This of course has the problem of not ruling out necessitation dualism, the view according to which psychological and physical properties are metaphysically distinct yet necessarily connected. Stoljar's reaction to that is the suggestion that necessitation dualism might be incoherent, if metaphysical distinctness entails only contingent, but not necessary, connections. Yet he acknowledges that this response may not be very convincing. And he acknowledges also that the defender of a realization formulation of physicalism is in a better position here, since she definitely can rule out necessitation dualism.

Now I disagree with Stoljar's views here. Moreover I think that there is something fundamentally wrong in his whole treatment of the notion of physicalist determination. To begin with, realization physicalism is attractive not merely because it rules out cases such as necessitation dualism, but because it tries to elucidate why the non-physical occurs in virtue of the physical, according to the physicalist. Physicalism is not merely a theory about necessary connections among empirical entities; it is rather an explanatory theory. The claim is that everything empirical in the actual world occurs in virtue of the physical. An analysis of realization just wants to elucidate this admittedly unclear 'in virtue of'.

Stoljar discusses, again very quickly, this view of physicalism as entailing an explanatory relation between the empirical in general and the physical. But he dismisses it altogether on the grounds that "it is

quite unclear that the physicalist must, of necessity, require that there is an explanation of why the necessitation relation obtains" (p. 156). But of course she must, otherwise there would be a basic metaphysical fact –the necessary connection between physical and non-physical entities—which would not be entirely physical. Yet surely physicalism entails that all basic metaphysical facts are entirely physical.

To conclude, let me just say a word about the third part of the book. After having dismissed physicalism, in the third part of the book Stoljar tries to argue that this is no serious loss. According to him, physicalism is a sort of philosophical Weltanschauung. Stoljar seems to conceive of physicalism as something akin to what Thomas Kuhn dubbed a 'paradigm', only that physicalism is supposed to be a paradigm in philosophy, not in science. As a Kunhian paradigm, the main attraction of physicalism is, according to Stoljar, that it sets out 'normal problems' (Stoljar speaks of 'placement problems', he never mentions Kuhn, though it looks as it is that what he has in mind) for the philosophical community to resolve, namely, how to account for certain philosophically intriguing notions, like consciousness or intentionality, in terms compatible with the general physicalist thesis.

Consequently, the bulk of the third part of the book is to argue, going case by case (although only the consciousness case is discussed with some depth), that physicalism is not essentially involved in any of these problems and philosophical discussions. So then the outright dismissal of physicalism, Stoljar finally concludes, does not involve any real loss of significance for current philosophical discussions.

Admitting that all this is very suggestive and interesting, I think that it is again misconceived in an important sense. For once again the empirical and explanatory character of physicalism is overlooked. Stoljar's view on physicalism seems so to speak very philosophically endogamic. The focus is on the role of physicalism in certain philosophical arguments and positions. But in fact there seems to be empirical evidence for physicalism which is quite independent from the role of physicalism in philosophical arguments. It is rather evidence revealed by the actual proceedings of current science. If you ask to the layman about the nature of a mental state (I've actually done that) the most common answer is that it is a brain state. Although this view may not be entirely correct, it is in any case a view which relies on empirical evidence. The psychiatrist deals with a depression by prescribing certain drugs affecting the workings of certain neurotransmit-

ters; the neurologist deals with the Parkinson disease by prescribing drugs which try to restore the correct distribution of dopamine in the brain, and so on. As Jerry Fodor once made clear, typically when a special science law faces an exception the scientist descends one level down to look into the laws governing the realizers in order to account for the exception and deal properly with it. This is the sort of empirical evidence which points to something like physicalism. So the dismissal of physicalism, irrespective of what turns out to be the case with current philosophical discussions, should be accompanied with the formulation of an alternative theory that can equally account for all this considerable amount of empirical data. This is what I'm afraid is entirely missing in Stoljar's otherwise excellent discussion of physicalism.

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