14. Physicalism and its Challenges in Social Ontology

forthcoming in *Oxford Handbook of Social Ontology*

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Abstract. This chapter will discuss the relation of physicalism to social ontology, and explores problems that social ontology raises for physicalism. Physicalism is often understood to be the view that all facts—the social ones included—are physical facts, or at least are exhaustively determined by physical facts. While this view is widely endorsed, social phenomena challenge physicalism in several ways, both challenging the coherence of claims of physicalism and raising potential counterexamples.

0 Overview

Physicalism, at least to a first approximation, is the thesis that everything is physical. This formulation conveys the rough idea. But that is already enough to raise various challenges.

Many of these challenges fit a general problematic. It begins with the observation that reality contains phenomena that do not appear to be purely physical, or perhaps not physical at all. Familiar examples may include numbers, minds, morals, or societies. If reality includes such phenomena, then physicalism seems to be incomplete if it excludes them and inadequate until it accounts for them in physical terms. This general problematic may take on various specific forms depending on just *which* phenomena—numbers, minds, morals, or societies—are in focus. Here our focus will be on challenges deriving from the phenomena from social ontology. It is not altogether clear how these challenges compare to those in other domains. Notoriously, the mental and the moral have continually posed challenges to physicalism. It remains to be seen whether the social

domain adds anything distinctive beyond those challenges. So it will be worthwhile to attend to the details specific to social ontology while bearing in mind the general issues as well.

Challenges arising in the case of social ontology tend to be manifestations of the general problematic. For example, Baker (2019: 2-3) recently discussed one manifestation of it in her critical discussion of Searle (1995,2010). Her framing of the criticisms facing Searle can be repurposed to illustrate this problematic. Physicalism, as Searle (1995: 7) characterizes it, holds that reality "entirely consists of physical particles in fields of force". What goes on with at least some of these physical particles is not fully explained by individuals, like us, or societies, like ours. But reality also contains social phenomena of various sorts, including *objects* (currency, talismans, borders), *groups* (genders, races, teams), *institutions* (nations, clubs, universities), and more. These social phenomena were created by us. This leads some, such as Searle, to conclude that the social reality they comprise "exists only because we think it exists" (Searle 2010: 11). Social reality depends on us because we "project" it onto physical reality. This, Searle thinks, fits social phenomena into the physical world. But others have thought that their dependence on us prevents them from being genuinely physical. Many of the challenges social ontology raises for physicalism grapple, in one way or another, with reconciling these competing inclinations.[1]

These impressionistic remarks suggest that physicalism faces challenges from social ontology. But it remains to be seen whether these impressions of challenges actually reveal genuine challenges. In particular, it is hard to see how to move beyond the mere impressions without further clarifying physicalism itself. This chapter therefore begins by engaging with two questions about physicalism. The first question (§1) concerns the *nature* of the physical: What is it to be physical? The second question (§2) concerns the *scope* of physicalism: How much of reality is physicalism meant to apply to? Neither question can be addressed thoroughly here. But ignoring them

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[1] Although I have spoken of challenges *to* physicalism *from* social ontology, one may instead regard them as challenges *to* social ontology *from* physicalism. The common ground is that there is an apparent *conflict* between the two.

entirely would make it difficult to even begin to clarify how social phenomena may fit, or resist fitting, into a physical world. Again, these challenges cannot be addressed comprehensively here. So I have chosen to focus on two challenges.

The first challenge concerns the *completeness* of the physical (§3). Given that some social phenomena do not appear to be physical, how can they be included within physical reality? The challenge this question poses is whether physicalism provides a *complete* view of reality. For if the social phenomena are excluded, then physicalism will be incomplete. This challenge seems to rely on two assumptions: first, that the nature of the physical does not directly provide for the appearance of social phenomena; and second, that the intended scope of physicalism is all of reality, including social reality. The completeness challenge therefore engages with the nature of the physical and the scope of physicalism. Addressing the completeness challenge may therefore involve adjusting the formulations of the physical and of physicalism itself.

The second challenge concerns the *adequacy* of the physical (§4). Given that social phenomena can be included within physical reality, how in fact are they accounted for in physical terms? The challenge this question poses is whether physicalism provides an *adequate* view of reality. For if the social is left unaccounted for in physical terms, then physicalism will not be an adequate basis for characterizing what reality contains. One of the main tasks in addressing this challenge would seem to require clarifying just *how* social reality can be included with physical reality. So, like the first challenge, this challenge also engages with the nature of the physical. Addressing the adequacy challenge may, as before, involve adjusting the formulations of the physical and of physicalism itself.

We may sum up the completeness problem as about the possibility of including the social within the physical, and the adequacy problem as about actually specifying how it is included. The two challenges are related. Perhaps, at rock bottom, they may even converge. Even so, they differ at least in focus or emphasis. Separating them helps highlight their differences. That, in turn, may help to clarify the challenges themselves, how they relate, and how they might best be addressed.

1 The nature of the physical

Our first question about physicalism concerns the *nature* of the physical. What is it to be physical?

We seem to have at least some rough conception of the physical. Some of it derives from mundane examples. You may be reading these words on a screen or a sheet of paper. If so, the screen or the paper is physical. Trees, trucks, waves, and livers are other paradigms of the physical. But not just anything is supposed to be physical. Paradigmatic examples include deities, spirits, and numbers.[2] Whether or not any such phenomena exist, no conception of the physical should count them as physical.

Some theorists have suggested that many social phenomena also do not appear to be physical. They may be under the influence of a common temptation to anthropomorphize some social phenomena. To illustrate, it is often tempting to characterize the actions or history of a culture or a nation or a society as if they were caused or influenced by an animating consciousness or "spirit". We often speak, rightly or wrongly, as if entire cultures, nations, or societies have character traits ("the later Roman Empire was lazy and decadent"), goals or ambitions ("Nazi Germany wanted to dominate the world"), or affective states ("the suffering of African Americans"). As natural as these characterizations may be, they are often understood to be metaphorical. But those inspired by Hegel (1807/2017) are often interpreted as understanding them literally. In this vein, a culture or a nation or a society has a "spirit" in much the same way as Descartes thought that a human body has an immaterial soul. If there are such Hegelian "social spirits", then they would seem to have no place within physical reality.

Nowadays, receptivity to Hegelian social spirits is largely confined to the margins. Even so, there is still a common tendency to regard social phenomena as somehow ill-suited for physical reality. Granted, some social phenomena may, at least at first glance, seem physical. This may include various social *objects*, such as currency,

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[2] Although see Maddy 1992 for a contrary view about numbers.

talismans, or natural borders. But other social phenomena are not so clearly physical. Social *groups*, such as genders, races, and teams, have people as members. And people—or at least their bodies—are physical. Now, it may be argued that although people help make up these groups, the groups themselves needn't be physical. Similarly, social *institutions,* such as nations, clubs, and universities, are not so clearly physical either. They may involve physical locations (such as a nation's territory or a university's campus). Or they may involve physical individuals (such as the members of the club or the citizens of the nation). But, again, it may be argued that these institutions have physical or personal manifestations, the institutions themselves needn't thereby be physical. It is, after all, often supposed that some institutions have features that somehow go beyond the features of its aggregated members (as we shall see in §4).

One might hope that a more theoretical characterization of the physical would help with these awkward cases. Unfortunately, the most common theoretical characterizations of the physical face significant difficulties (Stoljar 2017). A comprehensive treatment of these difficulties is beyond the scope of this chapter.[3] Still, we may get a sense of what they are. For one example, the physical is often characterized as whatever is in *space or time or spacetime*. But spatiotemporality risks being inadequate if spacetime emerges from more basic physical phenomena, as some quantum theories of gravity may suggest (Huggett and Wüthrich 2013). For a second example, the physical is often characterized as being *causal*: able to help cause effects or to be an effect of causes. But causality risks misclassifying immaterial souls as physical if they could causally interact with human bodies, as Descartes believed they could. And for a third example, the physical is often characterized as being *nonmental* (or, more cautiously, not fundamentally mental). But nonmentality risks misclassifying thinking human bodies as not physical.

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[3] In particular, I focus on approaches that take physicalism to be a theory or thesis, as opposed to its being an attitude or stance (Ney 2008; Van Fraassen 2002).

These difficulties suggest deferring to science to characterize the physical.[4] But this too raises a difficulty. To illustrate, fundamental physics is filled with arcana, such as fields, forces, and wavefunctions. Their inclusion in fundamental physics should earn them their physicality. The sense in which these arcana are physical, however, seems far removed from the sense in which trees, trucks, waves, and livers are. Even if we can reconcile the physicality of the mundane and arcane cases alike, it is unclear that *social* phenomena are physical in the sense which either waves or wavefunctions are.

These considerations call to mind a well-known dilemma for physicalism posed by Hempel (1969). On the one hand, if the physical is as we *now* understand it to be, then physicalism is presently incomplete: for it does not yet account for all of the phenomena that do not appear to be physical. On the other hand, if the physical is whatever a future *ideal* version of it turns out to be, then physicalism is presently obscure: for not only is this ideal version not yet understood, but it may also turn out to conflict with what we now expect the physical to be like. It is difficult to assess this dilemma. There is some irony in adhering to a view of reality rooted in the progress of science that, for all we now know, might clash with what future science reveals. The dilemma may have less to do with whatever physicalism turns out to be and more to do with our current expectations about what it should be.

Let us take stock. At first glance, it is not straightforward how to reconcile the social with either a mundane or a theoretical characterization of the physical. It is unclear, however, whether this poses any distinctive challenge to physicalism. There are general difficulties for specifying the notion of the physical. But these difficulties, as serious as they may be, do not seem to shake our confidence that there is some intelligible notion of the physical, however much it might elude an exact formulation. It seems our immediate purposes may be served with only a vague conception of the physical. And so I will proceed with whatever *that* is in mind.

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[4] This view has been suggested, in one form or another, by many philosophers, such as Loewer (2001), Stoljar (2010), and Wilson (2006), among others.

2 The scope of the physical

Our second question about physicalism concerns its *scope.* How much of reality is physicalism meant to apply?

Our initial formulation of physicalism said that every*thing* is physical. This may suggest that physicalism only concerns *things* as opposed to, say, properties, relations, or other "non-thingy" phenomena such as forces, fields, or wavefunctions. And this may seem too narrow. Physicalism is meant to be an ambitious thesis about reality itself, not just its "thingy" parts. But then any formulation of physicalism that confines its scope to things will fail out of the gates to achieve its ambition. The challenge is to calibrate physicalism's scope so that it does not rashly deliver such results.

The challenge is amplified by considering cases from social ontology. Many social phenomena seem "thingy". Consider a particular dollar bill, or basketball team, or university. Each of these seems individual enough to be regarded as a "thing". In addition to these "thingy" social phenomena, there may also be "non-thingy" social phenomena. These may include distinctively social properties and relations. But a purely "thingy" formulation of physicalism would automatically exclude such "non-thingy" social phenomena from physical reality. As before, the challenge is to calibrate physicalism's scope so that it does not rashly deliver such results.

One response to the scope challenge involves adjusting the quantificational formulation of physicalism. Let us use 'item' as a neutral term for any entity or phenomenon regardless of whether it "thingy" or "non-thingy". We may then distinguish two variants of the quantificational response. The first variant uses a single quantifier but expands its reach to cover all items, whether individuals, properties, relations, forces, fields, wavefunctions, and so on. Physicalism then says that every item (in the expanded sense) is physical. Another variant uses a separate quantifier restricted to each sort of item. Physicalism then says that for each sort, every item of that sort is physical.

Although some form of the quantificational response may meet the scope challenge, I will focus on another recently prominent

alternative. This alternative reformulates physicalism as a thesis about the *facts*. Sometimes facts are understood in "metaphysically loaded" ways as a special kind of "thing". For example, on one prominent conception, a fact is a "state of affairs": a certain kind of "non-mereological whole" that includes the instantiation of a universal in some particulars.[5] This, and other, notions of facts are philosophically controversial. But I do not have any such metaphysically loaded "thingy" conceptions in mind. By 'fact', I mean a *state* of reality. These states may be understood as broadly or as narrowly as needed to understand how reality is. Thus, these states may be specific (the state that Ariana sings), general (the state that dogs bark), abstract (the state that the number 2 is prime), complex (the conjunctive state that it is rainy and cold), and so on. But no assumptions are made about the natures of these states. It is not assumed, for instance, that these states are the instantiations of universals in particulars, or bundles of compresent tropes, or anything else. States, so understood, are little more than neutral placeholders. As such, they call for further investigation. But their neutrality is precisely what makes them apt for present purposes.

The main benefit of formulating physicalism in terms of our neutral conception of facts is to import the neutrality of the conception into the formulation. Rather than having our formulation focus on physical *things*, it now focuses on physical *facts*. We may, if we wish, understand a physical fact to involve physical things. But we are not obliged to. We may also allow that a physical fact needn't involve things at all but rather, say, physical properties, relations, or whatever. And, of course, we may allow a physical fact to involve all the above. Later we will see some further benefits of formulating physicalism in terms of facts.

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[5] This is a conception of state of affairs familiar from Armstrong (1997,1989). As Armstrong allows, a state of affairs may also involve the instantiation of a "higher-order" universal in "lower-order" universals.

3 The completeness of the physical

Our first challenge concerns physicalism as a *complete* account of reality. Much of reality, at least on the face of it, does not appear to be physical. For example, numbers, minds, morals, and societies do not easily conform to the paradigms of being physical. Now, we should be open to the possibility that further inquiry might eventually reveal that some nonconforming items like these do not exist. But only the most austere, nihilistic physicalist would regard their commitment to physicalism itself as immodestly *obliging* them to deny their existence. If our formulation of physicalism itself immediately implies that none of them do exist, then their apparent manifest existence may seem to refute physicalism. One might then wonder why physicalism has been so prominent if it is at risk of such easy refutation. By contrast, many physicalists have modestly wished to avoid this nihilism. If a non-nihilistic physicalism is to be a complete worldview, then it must be possible somehow to include the nonconforming items within the physical world.

This inclusionary task, however, may seem to be incoherent. The term 'nonphysical' is often taken to mean *not physical*. It is then contradictory for anything to be both physical and nonphysical. Granted, phenomena of one sort may be explained in terms of another. For example, chemistry investigates molecular phenomena in terms of atomic phenomena. And although nothing can both be molecular and atomic, nothing in the natures of a molecule or an atom precludes the investigation. Indeed, a molecule is by its nature composed of atoms and an atom is by its nature apt for composing a molecule.[6] By contrast, the very natures of the physical and the nonphysical seem to obstruct accounting for the nonphysical in terms of the physical. How could any such account be coherent, if physicality and nonphysicality are mutually exclusive?

A prominent strategy for answering this question relies on a distinction between being physical and being *ultimately* physical. Just as molecular phenomena—while not atomic—may have an ultimately

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[6] My qualification 'apt for' is meant to cover irrelevant complications, such as those raised by unstable atoms or molecules.

atomic basis, so too the nonphysical—while not physical—may have an ultimately physical basis. Physicalists may then grant that there are nonphysical items as long as these *"arise"* from an ultimately physical basis.[7] This insulates physicalism from refutation by the apparent manifest existence of nonphysical items. They won't be counterexamples to physicalism, provided that they can ultimately be accounted for in physical terms. Producing the account is all that remains to completing the physicalist view of reality.

Our formulation of physicalism now says that all facts are ultimately physical facts. The relevant notion of *ultimately* needs further clarification. There is presumably no question whether a physical fact is ultimately a physical fact. So the focus will be on explaining how nonphysical facts are ultimately physical facts.

There are a variety of ways one might develop the idea. In the first half of the 20th century, a common strategy relied on a notion of *theoretical translation or equivalence*. Two theories were formulated (often in a formal language): an "extended" theory for expressing all facts and a "physical" theory for expressing only physical facts. Then the task was to show how the extended theory could be translated into, or otherwise shown to be equivalent to, the physical theory. But

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[7] The terminology is somewhat awkward. We may get some relief from an analogy in the logic of relations. A relation R is *symmetric* if and only if for all x and y, x is R-related to y if and only if y is R-related to x. We may distinguish two ways of failing to be symmetric. First, a relation R is *nonsymmetric* if and only if it is not symmetric. Second, a relation R is *asymmetric* if and only if for all x and y, if x is R-related to y then y is not R-related to x. The difference, roughly, is that 'nonsymmetry' means not *fully* symmetric whereas 'asymmetry' means *fully* not symmetric. There can be no "symmetric instances" of an asymmetric relation. For example, there is no x and y for which x is less than y and y is less than x. By contrast, there can be "symmetric" instances of a nonsymmetric relation. For example, although 'loves' is not symmetric (as witnessed by unrequited love), it allows for "symmetric instances" (as witnessed by requited love). In this way, put loosely, relations that are nonsymmetric but not asymmetric may be thought of as *partially but not fully* symmetric. We may draw an analogous distinction between two senses of 'nonphysical'. The difference, roughly, is that 'nonphysical' in the *"inclusive"* sense means not *fully* physical whereas in the *"exclusive"* sense it means *fully* not physical. Focus on the inclusive sense. Just as nonsymmetric but not asymmetric relations are *partially but not fully* symmetric, so too the nonphysical (in the inclusive sense) may be thought of as *partially but not fully* physical.

many familiar and well-worn difficulties arise.[8] Many of them are taken to derive from the strict requirements for showing that two theories are intertranslatable or otherwise equivalent. And so many philosophers sought an alternative.

For the second half of the 20th century, the dominant alternative strategy relied on a notion of *supervenience*. Roughly put, supervenience is a kind of modal covariation. The notion was first formulated in terms of properties. But it has since been extended to facts, which better fits our focus here. A fact A supervenes on other facts $C_1, C_2, ...$ if and only if it is necessary that if A then $C_1, C_2, ...$[9] Formulations of physicalism in terms of supervenience often took something like the following form: [10]

> Supervenience Physicalism   All facts supervene on physical facts.

This set the agenda for showing how nonphysical facts were ultimately physical facts: show that the former supervene on the latter. But now-familiar difficulties for the formulation, and for the task, immediately arose. Perhaps chief among them was the persistent worry that supervenience was too weak to capture an explanatory relation. An early and influential statement of this worry comes from an oft-quoted passage from Kim (1993: 167):

> . . . [S]upervenience itself is not an explanatory relation. It is not a "deep" metaphysical relation; rather, it is a "surface" relation that reports a pattern of property covariation, suggesting the presence of an interesting dependency relation that might explain it. But we

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[8] There is an enormous literature on these difficulties. Many of them emerged from attempts by logical empiricists to give criteria of empirical or cognitive significance. An overview and critical discussion can be found in Hempel (1965). For a more recent discussion, see Sider (2020).

[9] Strictly speaking, it is ungrammatical to put the list '$C_1, C_2, ...$' as the consequent of a conditional. One remedy is to put in the *conjunction* '$C_1 \wedge C_2 \wedge ...$ ', although that also raises complications. But it would be distracting to pursue these issues here.

[10] It was actually somewhat more common to characterize physicalism as a supervenience claim about *properties*. But for the reasons given in the main text, I regard the characterization in terms of facts as an improvement.

> don't have a mind-body theory until we have something to say about the ground of mental–physical property covariation.

Although Kim was focusing on mind-body supervenience, his point generalizes. It is often supported by noting that standard characterizations of supervenience require it to have certain structural features ill-suited for its being an explanatory relation. For example, it is widely thought that, in general, a fact does not explain itself; but, trivially, every fact supervenes on itself.[11] For another example, it is widely thought that not all facts are explained by an arbitrary necessary fact; but, trivially, every fact supervenes on any necessary fact.[12] Considerations like these support Kim's point that supervenience is a symptom of an underlying phenomena. Of course, sometimes it is appropriate to focus on or treat only the symptoms. But that does not conflict with our ultimate aim to engage with the underlying phenomena. In that spirit, many have turned away from supervenience formulations and sought out other notions more likely to get to the heart of the matter.[13]

In the contemporary scene, it is increasingly common to find physicalism formulated in terms of the notion of *ground*. This is the determinative notion at work when one fact, the *grounded* fact, holds *because* or *in virtue* of other facts, the *grounds*.[14] Ground is often taken to be (or to at least have a close affinity with) an explanatory notion (Glazier 2020). So ground seems more apt than supervenience for formulating physicalism. One especially natural formulation is:[15]

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[11] When A=C, that A supervenes on C is equivalent to the triviality that it is necessary that if A then A.

[12] When C is a necessary fact like 0=0, that A supervenes on C is vacuously true because it is impossible for C not to obtain.

[13] But not everyone; see Kovacs (2019) for a critical counterpoint.

[14] See Raven (2015) for an overview and Raven (2020c) for a comprehensive survey.

[15] See Bryant (2020) for physicalism in connection with ground, Passinsky (2020b) for social ontology in connection with ground, and Kovacs (2020) for ground and supervenience.

> **Ground Physicalism** All facts are, or are grounded in, physical facts.

This sets a different agenda for showing how nonphysical facts are ultimately physical facts: show how the physical facts *ground* the nonphysical facts. Doing so would show how to incorporate nonphysical facts into an ultimately physical world. And that would help meet the challenge of completeness.

But matters are less clear upon closer inspection. For there is a distinctive class of facts that seems especially resistant to being, or being grounded in, any physical facts. This is the class of facts about the *"setup"* of the social world. To a first approximation, these *"setup facts"* facts concern general conditions in which social phenomena unfold. There is no consensus on what these setup facts are, or even what forms they may take. But we may illustrate the general idea by considering three potential forms.[16]

First, setup facts may take the form of *essentialist* facts about social items.[17] For example, perhaps it lies in the essence or nature of money to be a store of value. Or, for another example, perhaps it lies in the essence or nature of being a woman to be systematically subordinated and to be marked for this treatment by observed or imagined bodily features taken as evidence of a female's biological role in reproduction (cf. Haslanger 2012).

Second, setup facts may take the form of *frame principles* about social facts. Roughly, a frame principle sets up the modal conditions under which certain facts may ground others. Epstein (2015) suggests this may be understood as a collection of facts that specifies, across all possible worlds, just what the grounds of certain facts are. For example, a frame principle may setup that, in each possible world, the fact that a given bill is a dollar is grounded in the bill's being printed by the Bureau of Printing and Engraving. There are

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[16] It needn't be supposed that the setup facts must take on only one of these forms, or even that the forms are mutually exclusive or mutually exhaustive.

[17] Social ontology and essence were long thought to be at loggerheads. But some now argue for reconciling them (Mason 2021; Passinsky 2021; Raven 2020b). For more on the notion of essence, see Koslicki and Raven (2024).

controversies over how best to understand this setting-up relation.[18] But our purposes here don't require engaging with these here.

Third, setup facts may take the form of *meta-ground* facts about the grounds of social facts. Given that facts $A_1, A_2, \dots$ ground fact C, there is then then *meta-ground* fact $[A_1, A_2, \dots$ ground C].[19] There are unresolved general questions about meta-ground facts.[20] But setting them aside, the present idea is to regard setup facts as meta-ground facts. So, where physical facts $P_1, P_2, \dots$ ground social fact S, there is then the meta-ground fact that $[P_1, P_2, \dots$ grounds S]. This may then be taken to be a setup fact capturing how the physical grounds the social.

These forms of setup facts, despite their differences, pose a similar challenge to physicalism. Given that some setup fact obtains, we may ask whether *it* is a physical or a nonphysical fact. This question seems legitimate. But, as we shall see, it is not at all easy to see how any answer to it plausibly coheres with physicalism.[21]

There are at least two obstacles to regarding the setup facts as physical facts. The first obstacle is that the setup facts are themselves about social items or social facts. Any general reasons for regarding social items or social facts as nonphysical will therefore be inherited by the setup facts in particular.

The second obstacle is that the setup facts involve notions that are often thought not to fit into a physicalist worldview. Depending on the flavor of the setup facts, these notions are essence, modality,

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[18] Epstein (2015) claims that the setting-up relation should not be understood in terms of ground but rather as a *bona fide* relation he calls *"anchoring"*. Various criticisms of this claim have been raised by Hawley (2019), Mikkola (2019), and Schaffer (2019), and responded to by Epstein (2019a,2019b). See Passinsky 2020b for a brief overview.

[19] Here I use the familiar notation '[ɸ]' to express *the fact that* ɸ.

[20] See Litland (2020) for an overview.

[21] It is natural to regard this challenge as a particular manifestation of a more general challenge: how can physicalism even be possible if any attempt to account for the nonphysical in terms of the physical must mention the nonphysical? The general discussion is discussed by Sider (2011), Dasgupta (2014), and Raven (2024).

and ground. It is controversial whether these notions are acceptable to physicalists. It is not uncommon to hear that an austerely physicalist worldview must exclude such "metaphysical exotica" as essence, modality, and ground. (Indeed, this is sometimes advertised as one of physicalism's main benefits.) At the very least, the presence of essence, modality, or ground in the setup facts poses a *prima facie* obstacle to regarding those facts as physical.

These obstacles may suggest that the setup facts must instead be taken to be nonphysical facts. But then the completeness challenge reappears. How could physicalism be a complete worldview if the setup facts are nonphysical?

We may adapt the previous strategy in reply. In the previous case, the key idea was to allow nonphysical facts to be ultimately physical. In the present case, perhaps it may be granted that the setup facts are nonphysical, so long as they are ultimately physical. And, so the strategy goes, their status as being ultimately physical would be secured if they were somehow grounded in physical facts.

The strategy's success depends on working out what the physical facts grounding the setup facts might plausibly be. But at least two difficulties stand in the way of completing this task.

First, the strategy presupposes that the setup facts *have* grounds. And that presupposition is already controversial. The controversies are perhaps most striking in the case of essentialist facts. Not only is it unclear whether essentialist facts have any grounds, some have gone as far as to suggest that the question of whether or not they do is somehow illegitimate.[22] There are related controversies over what, if anything, grounds facts about what grounds what.[23] There has been almost no explicit discussion of what, if anything, grounds frame principles.

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[22] In particular, Dasgupta (2014,2016) claims that essentialist facts are not merely ungrounded but are not even "apt" for being grounded. Raven (2020a) criticizes the claim and tentatively suggests how some essentialist facts may have grounds.

[23] See Litland (2020) for an overview of these controversies.

Second, even if it is granted that the setup facts *have* grounds, it remains to be shown whether those grounds are, indeed, *physical* facts. Again, the matter is controversial. This is readily illustrated in the case of ground facts. Some views entail that the setup fact [P_1,P_2,... grounds S] itself is grounded in the same physical facts that ground the social fact, i.e. [P_1,P_2,... grounds [P_1,P_2,... grounds S]].[24] If so, then these setup facts of ground would not seem to be pose any challenge to physicalism. But, as before, views of this sort are controversial. In the case of essentialist facts, it is even less clear how they might have physical grounds, even granting that they have grounds at all. And, again, there has been almost no explicit discussion of what, if anything, grounds frame principles.

In light of these difficulties, it remains to be seen whether the setup facts have grounds and, if they do, whether their grounds are physical. Only once this is shown will the strategy have shown how the setup facts may be ultimately physical.

4 The adequacy of physicalism

Our second challenge concerns the *adequacy* of physicalism as an account of social reality. The previous challenge to the completeness of physicalism ended up concerning whether, even in principle, physical facts could ground nonphysical facts. But let us, for now at least, grant that they can. Then the next task is to account for precisely *how* nonphysical facts are grounded in physical facts. As we shall see, various difficulties arise once we engage with the details of delivering such an account.

Construing social items as like paradigmatic physical items may encourage the impression that social ontology poses challenges for physicalism. This is perhaps best illustrated by considering *social groups*.[25] Suppose we think of a social group like a complex material

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[24] See Bennett (2011) and deRosset (2013) for views that have this consequence.

[25] Groups have been much discussed in the recent literature, including Copp (1984), Effingham (2010), Epstein (2015,2019c), Fine (2020), Hawley (2017),

object. Just as the complex material object will have various material parts, so too the social group will have various individual members. This suggests that familiar problems arising for complex material objects may have analogues for social groups.[26]

One of these familiar problems in the metaphysics of material objects concerns *material coincidence.* Consider Gibbard (1975)'s famous example of a sculptor who joins two bronze halves. The resulting piece is a statue. Later the sculptor obliterates the creation. In between, there was a whole piece of bronze formed from the halves. This piece existed exactly where and when the statue existed. The piece and the statue coincide in space and in time. And yet the piece and the statue seem to differ. The piece, but not the statue, could survive reshaping into a ball. And the statue, but not the piece, could be innovative or well-made. If the piece and the statue differ, then we would like an account of why. But because the piece and the statue exactly coincide in space and in time, it may seem as if there is nothing to ground their difference. This is the so-called *grounding problem* (Bennett 2004).

There is an analogous problem in social metaphysics concerning *group coincidence*.[27] Examples of social groups include a departmental committee, the U.S. Supreme Court, a sports team, women, Irish-Americans, and homosexuals.[28] Each of these groups has its individual members: the faculty of the department, the justices, the athletes, individual women, individual Irish-Americans, and

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Pagano (2024), Richardson (2022), Ritchie (2013,2015,2020), Thomasson (2019), and Uzquiano (2004,2018), among others. See also Ritchie's chapter "Social Groups" in this volume.

[26] The point is made by Epstein (2015), Hawley (2017), Uzquiano (2004), and others.

[27] Gilbert (1987) is an early and influential discussion of coincident social groups.

[28] There is some controversy over how these examples differ. Ritchie (2015) suggests that there is a difference in kind between the first trio which are organized ("Type 1") and the second trio which are not ("Type 2"). By contrast, Fine (2020) suggests these examples do not differ in kind but only in the degree to which the groups are organized.

individual homosexuals.[29] It is an apparent datum that two groups may have the same individual members. For example, the members of the faculty might also be the sole players of a baseball team. But if a group is "nothing over and above" its individual members, then it may seem as if the department and the baseball team could not differ. And yet they do. Here we have an analogue of the grounding problem: what, if not the individuals themselves, grounds the difference between the two groups?

Although neither the grounding nor the group coincidence problems exclusively target physicalists, they may be especially acute for them.[30] The core of the grounding problem is to explain, or explain away, the apparent datum of material coincidence: that there are distinct material items that coincide. This is a problem for anyone who does not just dismiss the datum outright. What makes it acute for physicalists is that it may not appear as if there is either a time or a place for any physical difference between the piece and the statue. Analogously, the core of the group coincidence problem is to explain, or explain away, the apparent datum of group coincidence: that there are distinct groups that coincide. Like the grounding problem, this too is a problem for anyone who does not just dismiss the datum outright. But, also like the grounding problem, this problem may be especially acute for physicalists. For if a group is wherever and whenever its individual members are, then it may not appear as if there is either a time or a place for any physical difference between the two groups.

Physicalists have suggested various responses to these problems. One response is that bronze, statues, individuals, and groups each have their own distinctive causal, dispositional, or modal features. Were there such features, they would provide for a physical difference between two coincident material objects, or two coincident groups. But if this not to just recapitulate the original problem, these causal,

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[29] While these groups have members, it needn't be required that a group must have members. For example, perhaps a sports team may persist through the retirement of its member athletes.

[30] Indeed, Gibbard (1975: 214) thinks a benefit of his response to the grounding problem is that it helps reveal how "concrete things and possible worlds lose some of their mystery: they arise naturally from a systematic picture of the *physical* world" (my emphasis).

dispositional, or modal features must not be derivable solely from an items spatial or temporal features. And that may, in turn, obscure how these features could be regarded as properly physical. There is, of course, a great deal more to be said about the grounding and group coincidence problems. The present point is just that they illustrate the general challenge of reconciling physicalism with the existence of various items that seem, at least at first glance, to resist fitting into a physical world.

The group coincidence problem interacts with more general questions about the nature or identity of social groups. One of these is what exactly is the relationship between a group and its individual members? The literature contains various approaches. It may be thought that they may shed light on group coincidence.

A *mereological* approach takes social groups to be *fusions, sums,* or *aggregates* of some sort (Burge 1977; Hawley 2017; Sider 2001). It is often assumed that if the individual members making up a group are physical, then the group will also be physical (cf. Hawley 2017). If so, then the mereological approach may not conflict with physicalism *per se*. But there are still formidable difficulties in accounting for groups in mereological terms (Ruben 1983; Uzquiano 2004; Effingham 2010; Ritchie 2013,2015; see Hawley 2017 for a recent defense). In particular, it is not evident whether these approaches can recognize the apparent datum that two groups can have the same individual members.

A *set-theoretic* approach takes social groups to be *sets* of some sort (Effingham 2010). This approach also faces formidable difficulties (Ritchie 2013,2015). As with the mereological approach, it is not evident whether set-theoretic approaches can recognize the apparent datum that two groups can have the same individual members. And the set-theoretic approach may face an additional difficulty cohering with physicalism. After all, sets are often taken to be paradigm examples of abstracta and abstracta are widely thought to be *nonphysical*.

In light of the previous difficulties, some have suggested that social groups are *sui generis* entities (Uzquiano 2004). This has the advantage of at least allowing the recognition of the apparent datum.

But the approach risks being unable to account for why groups are physical. To take social groups to be *sui generis* is to decline to analyze or reduce them to entities of another sort, including their individual members. But then no such analysis or reduction can be used to help explain why groups are physical, if indeed they are. Physicalists who claim that groups indeed are physical therefore run the risk of being deprived of any account of why their claim is true.

Some have recently suggested a *structured* approach to social groups (Fine 2020; Passinsky 2020a; Ritchie 2013,2020; Uzquiano 2018). This is, or is at least somewhat like, taking social groups to be *hylomorphic compounds*.[31] In this vein, a social group may be thought of as a compound of "form" (a social structure) and of "matter" (its individual members).[32] For instance, Fine (2020) applies his theory of embodiment (Fine 1999) to developing this picture and to address various problems about social groups, including their location. The forms postulated by hylomorphism, however, are often supposed to be somehow over and above the matter that they form.[33] It is also sometimes supposed that this would require regarding these forms as nonphysical. Given these two suppositions, forms would indeed conflict with physicalism. But it is unclear whether the suppositions are correct. For instance, there is nothing in Fine's theory of embodiment that requires forms to be nonphysical.

Some of these approaches relate to *individualism* within social ontology. To a first approximation, *individualism* takes the basis of

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[31] Hylomorphic approaches to social items are somewhat less common than hylomorphic approaches to material objects and to artifacts (Evnine 2016, but see Raven (2018) for doubts; Fine (1982,1999); Johnston (2006); Koslicki (2008,2018)). See Loets (2020) for a criticism of hylomorphic approaches to social items.

[32] The term 'matter' is misleading for suggesting *being material*. But the suggestion should be resisted. The matter of a hylomorphic compound is just whatever it is—material or immaterial—that is formed.

[33] Not all structured approaches in the spirit of hylomorphism have this consequence. For instance, Uzquiano (2018: 426) offers what he describes as a "structurally similar account with all the benefits of the hylomorphic account but without the consequence that at a given time, a group is a complex object over and above some individual as they exemplify a certain complex condition".

social reality to be the individuals it comprises. These individuals are, typically, creatures with minds—people like us. This means that whatever difficulties arise for locating the mental in the physical world will transfer to individualists—indeed, to anyone who takes the social to involve the mental.

But some of the preceding approaches may seem at odds with individualism. One example is the set-theoretic approach. Presumably, the sets corresponding to groups are abstract objects that exist apart from their member individuals. But then there are parts of social reality—social groups—that *do* consist in something more—sets—than just the individuals.[34] A second example is the structured or hylomorphic approach. Even if its forms are not immaterial, they are evidently something over and above the matter—the individuals. So, again, there would be parts of social reality—social groups—that *do* consist in something more—social forms or structures—than just the individuals.

Individualism, however, has been criticized for exaggerating the role of individuals and overlooking the role of other contributing factors. In particular, Epstein (2015) has recently emphasized that some social items involve various factors beyond any individuals. For example, the Starbucks Corporation comprises many individuals (board members, employees) and the facts about it involve many other individuals as well (vendors, customers). But Starbucks also involves the Starbucks Center (its headquarters), the first Starbucks (a common tourist attraction in Seattle's Pike Place Market), many Clover brewing machines, the controversial red holiday paper cups, and more. These contributing factors, or *"material conditions"*, are not readily assimilated to any individuals.

A natural reaction to considerations like these is to widen the basis of social reality beyond just the individuals to include the material conditions as well. And perhaps the most natural expansion

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[34] In a somewhat similar vein, Schneider (2017a) has argued that the deeply mathematical nature of current physics threatens its *physicalist* credentials. See Montero (2017), Goff (2017), Vision (2017), Witmer (2017), Montemayor (2017), and Balaguer (2017) for replies, and Schneider (2017b) for her counterreply.

takes the basis of social reality to be all of physical reality (Epstein 2009; Hindriks 2013; Ylikoski 2014).

Emphasizing the material conditions of social groups may seem to help with the problem of group coincidence. For the material conditions may provide a basis on which to distinguish social groups that share the same individual members. For example, campus offices are among the material conditions of the department but not the baseball team, while mitts and bats are among the material conditions of the baseball team but not the department. If these material conditions count, then there are *physical* differences between the two social groups after all.

This strategy, however, is limited. For one, it can only apply to social groups that *have* material conditions. But perhaps there may be social groups that have none, at least at certain times. For example, suppose that a dozen individuals form an improv comedy troupe on Monday. It resolves never to use props, costumes, or other material aides. Not wishing to be limited to just one comedic outlet, the same dozen individuals form *another* improv comedy troupe on Tuesday. Like the first troupe, the second troupe also resolves never to use props, costumes, or other material aides. But the second troupe distinguishes itself by its refusal to use obscenities. It now seems that we may have *two* social groups but without any material conditions. If so, then there is no difference in material conditions to count toward any physical difference between the two groups.

It is not even clear that there will be the *individual members* to appeal to in distinguishing between different social groups. Continuing the previous example, suppose that on Wednesday the first troupe institutionalizes its identity in solemn declarations of the principles and procedures governing it. After a bitter argument later that night over its use of obscenities, all dozen individuals resign. With tempers calmed by Friday, all dozen individuals rejoin. It may be argued that Wednesday's institutionalization allowed the troupe to survive losing, and then regaining, all of its individual members. If so, then it would seem a social group may survive without either material conditions or individual members. And we may imagine that the *second* troupe went through similar drama on Thursday by bitterly arguing over its avoidance of obscenities. If so, then that night there

were *two* different social groups despite their being no difference in their material conditions or individual members.

Although our focus has been on social groups, the problems are not limited to them. There is also the problem of locating social items in general (Hindriks 2012,2013; Ruben 1983,1985). Some social items do not seem to have individual members in the straightforward sense in which social groups do. Examples might include political entities (nations, political offices), languages, digital currency (Bitcoin), legal entities (contracts, marriages, corporations), social artifacts[35] (baseball caps, talismans), and more. Some of these—such as digital currency or laws—may not even have material parts, let alone parts located in space. For example, Hindriks (2013: 414) asks about digital currency:

> Where, for instance, is the location of electronic money? Is it the bank where the account is held? All we find there is a computer that keeps track of bank records. It is not clear that electronic money even has a physical location.

And Smith (2007: 15) characterizes digital currency, and other "free-standing" social institutions and items, as "quasi-abstract entities not carved out within the realm of physics".

There is already a general problem of locating physical items. To illustrate, consider a cloud over Seattle. The cloud is a physical item if anything is. But, notoriously, it has vague boundaries. This vagueness hinders its having a precise location. And that in turn may raise various difficulties.[36] But it is not at all evident that among them lurks any challenge to the *physicality* of the cloud. Even if physical items must be located, they needn't be *precisely* located. The cloud's lack of a precise location is no obstacle to its being physical. Rather, it may be good enough that the facts about the cloud are grounded in various physical facts (about water vapor and the like).

Lurking behind the problems of coincidence and location may be two persistent inclinations: to think of a physical item as a *thing* that

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[35] The qualification 'social' is meant to allow for the possibility of artifacts created by or for a single individual.

[36] See Unger (2006) for further discussion.

is *precisely bounded*. Together these may tempt us to *locate* it and to reject its *coincidence* with other *things*. Granted, these inclinations may be apt in some cases. And if we overlook unruly cases (like statues and clouds), then the inclinations may seem to generalize. In particular, it may seem as if nonphysical things must have precise boundaries determined by the physical things on which they depend. And that in turn may suggest that the difficulties for nonphysical things having precise boundaries threaten their dependence on physical things.

But it may be doubted whether there is any reasonable expectation for physical items to be precisely bounded and non-coincident. The unruly cases of statues and clouds may support such doubts. It may be that precisely bounded and non-coincident physical things just are not representative paradigms of physical items.

These considerations extend to social ontology. For suppose our view is that social groups, corporations, digital currency, and the like must all be physical. The problems of location and of coincidence may then make it hard to see how these social items fit into the physical world *if fitting them in requires precise boundaries and non-coincidence.* But perhaps that is *not* what fitting them in requires.

Our own formulation of physicalism in terms of *facts* rather than *things* helps offset the preceding inclinations. For our focus is on grounding nonphysical *facts* in physical *facts*. This allows us to concede that social items coincide, so long as the facts about them are still grounded in different physical facts. It also allows us to concede that social items are not precisely bounded or have no location at all, so long as the facts about them are still grounded in physical facts. And, more generally, it allows for a broader range of approaches to "reducing" nonphysical items to physical items.[37]

None of this is to deny that there are genuine problems of coincidence and location for social items. The point is rather that

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[37] The "thingy" formulation may encourage (if not require) the impression that reductions must take the form of Quine's "proxy reductions". For a ground-theoretic alternative, showing an item to be "eliminable" is one way of providing a non-proxy reduction of it (Raven 2016).

these problems may not pose any challenges specific to physicalism. Earlier we saw that there is a problem of coincidence for material objects, not just social groups. Indeed, the general question of whether two distinct objects can coincide may always be raised, regardless of whether the objects are material. We also saw that there is a general problem of location for physical items, regardless of whether they are or form the basis of anything social. And so the problems of coincidence and location for social items may not pose any distinctive challenges to physicalism from social ontology.

5 Conclusion

This chapter discussed physicalism in relation to social ontology. Physicalism, roughly put, holds that all the facts are ultimately physical facts. This formulation called for considerable refinement. In particular, there are notorious difficulties specifying the nature and the scope of the physical. Many of the items belonging to social ontology do not appear to conform to common paradigms of being physical. This prompted two intertwined challenges to physicalism from social ontology. The first challenge concerned the completeness of physicalism. If social items cannot be included within physical reality, then physicalism is incomplete. But can social items be included in physical reality? The second challenge concerned the adequacy of physicalism. Given that social items can be included in physical reality, it is often hard to see just how they are to be included. How are social items accounted for in physical terms? Engaging these challenges involves clarifying various detailed issues specific to social ontology. But it also promises to be of broader interest as well. The challenges from social ontology often appeared to be manifestations of more general issues facing physicalism. If so, these general issues too may also be clarified by further exploring the case study of physicalism and social ontology.[38]

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