

5 Physicalism, Intentionality, and Normativity

The Essential Explanatory Gap

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5.1 Introduction

According to a familiar form of naturalism, the fundamental objects, properties, and facts in the world are physical, while the phenomena that are distinctive of the human world, such as intentionality or normativity, are in some sense ‘nothing over and above’ the physical. Recently, it has become popular to formulate this view in terms of the notion of *grounding* (Bennett 2017; Dasgupta 2014; deRosset 2023; Fine 2012; Moran 2022, 2023; Rosen 2010; Schaffer 2017, 2021). *Ground physicalists* hold that while all of the fundamental objects, properties, and facts are physical, derivative properties and facts are fully grounded in the physical. Though the term ‘grounding’ is a relative newcomer to the philosophical scene, the concept it expresses originates with Aristotle, and it is often meant to capture a broad range of metaphysical dependence relations designated by more familiar phrases, such as ‘in virtue of’, ‘constituted by’, ‘determined by’, or ‘realized by’ (Dasgupta 2017; deRosset 2023; Fine 2001; Rosen 2010). Ground physicalism is often presented as capturing the core of physicalism.

In this chapter, I take issue with ground physicalism about intentionality. I focus on the semantic properties of thought and understanding, such as the property of meaning addition by ‘plus’ or believing that there is chocolate in the cupboard, and the contingent, semantic facts in which these semantic properties figure. I develop an explanatory gap argument against ground physicalism, albeit one that diverges from traditional explanatory gap arguments familiar from the philosophy of consciousness, which point to the failure of reductive explanation through conceptual analysis, and rely on a controversial inference from conceptual, logical, or epistemic possibility to metaphysical possibility (Chalmers 1996; Jackson 1982; Levine 1983). Many physicalists argue in response that even if consciousness cannot be reductively explained, the mental is nonetheless identical to or metaphysically supervenient on the physical (Block and

Stalnaker 1999; Levine 1983). In contrast, the explanatory gap I point to stems from the failure of the *metaphysical explanation* of semantic facts in physical terms, and does not rely on an inference from conceivability to possibility. Rather, I argue that to provide an adequate metaphysical explanation of intentionality, the physicalist's semantico-physical grounding claims must be deducible from facts about essence, and that this adequacy constraint cannot be met. This argument cannot be resisted as easily, or in the same way, as traditional explanatory gap arguments.

Why does metaphysical explanation fail? My argument for the existence of an explanatory gap builds on Kripke's (1982) discussion of Wittgenstein's rule following considerations, in which he mounts an underdetermination argument against physicalism that is widely regarded as resting on the assumption that semantic properties and facts are *robustly normative*, in the sense that they are objectively prescriptive: they contain normative properties like obligatoriness or permission as constituents, and their normative authority is independent of any agent's subjective state of mind (Boghossian 1989; Hattiangadi 2007). In contrast, I argue here that the explanatory gap between intentionality and the physical arises because semantic properties and facts are essentially *weakly normative*. As a first pass, what I mean by this is that it lies in the essence of the contents of one's intentional mental states that they have correctness conditions, and that it is in virtue of having correctness conditions that contents are able to represent subjective reasons for action, and thereby rationalize—rather than merely cause—behaviour. I argue that the weak normativity of intentionality resists metaphysical explanation in physical terms.

Though my argument is inspired by considerations Kripke (1982) raises in the course of his sceptical argument, I do not reach his paradoxical conclusion that there are no semantic facts. Along with the ground physicalist, I take a realist stance towards semantic properties and facts, though for want of space, this assumption must remain undefended. The alternative to physicalism that serves as a foil here is a *semantic dualism* according to which semantic properties are real but *sui generis*, and are neither identical to, fully grounded in, nor supervenient on the physical. The form of dualism that I favour is akin to the naturalistic property dualism that Chalmers (1996) defends in relation to consciousness, which postulates contingent, psychophysical laws linking consciousness and the physical. Similarly, I maintain, though semantic properties are *sui generis*, the semantic facts are fully explained by the physical facts together with contingent psychophysical laws.

In the next section, I elaborate on ground physicalism. In Section 5.3, I develop the suggestion implicit in much of the work on grounding that metaphysical explanation is an epistemological guide to ground, and present two constraints on physicalist metaphysical explanations.

In Section 5.4, I distinguish weak from robust normativity and argue that intentionality is essentially weakly normative. In Section 5.5, I develop an explanatory gap argument against ground physicalism. This, I argue, gives us good reason to think that ground physicalism about intentionality is false.

5.2 Physicalism and Necessitation

Ground physicalists hold that the semantic facts are fully grounded in the physical facts. But what are the physical facts? To begin with, we can say that the physical facts have only physical objects and properties as constituents. But what objects and properties are *physical*? This question is notoriously difficult to answer. As Hempel (1949) pointed out, if we say that the physical properties are those postulated by current physical theory, physicalism is probably false, and if we say that the physical properties are those postulated by an ideal future physical theory, we have no idea what the physical properties are. A popular response to this dilemma is to give a gloss on the *kinds* of properties postulated by current physical theory, and can be expected to figure in any ideal or future physics. For instance, the physical properties can be characterized positively as those that are causal and structural (Chalmers 1996; Alter and Pereboom 2023), and they can be characterized negatively as those that are not essentially intentional or normative. The negative characterization is crucial, since the view that the physical facts are essentially intentional or normative amounts to a kind of pan-psychism or pan-normativism that is at odds with physicalism.

What are the semantic facts? Those that will concern us here are contingent facts concerning the properties of thought and understanding, such as the fact that a speaker means something by a word, or the fact that a particular agent has a belief with a certain content at some time. Note that I am not concerned with the shared meanings of public language expressions and sentences, but with the semantic properties of a speaker who understands—or perhaps even misunderstands—the meanings of public language expressions in some way. Semantic facts contain some semantic property or other, such as the property of having a meaning, content, truth, extension, or truth conditions. I remain neutral on how semantic properties are best modelled.

What is grounding? To begin with, it is a relation, the relata of which are variously said to be objects, properties, or facts, where facts may be thought of as states of affairs or true structured propositions, consisting of objects, properties, and relations.¹ I will assume, as is common, that grounding relations are transitive,² and I will confine my attention here to full grounding, unless otherwise indicated. In a nutshell, if we let [s] be an arbitrary semantic fact, such as that Maya believes that the sun is shining

at a certain time and place, the ground physicalist holds that there is some set of physical facts, Π , such that

(1) [s] is grounded in Π .

As I mentioned earlier, ground physicalism is often presented as a way of capturing the core of physicalism. And it is widely held that physicalism entails that³:

(2) The mental supervenes on the physical.

Though there are many ways of precisifying (2) (McLaughlin and Bennett, 2023), the rough idea is that the physical metaphysically necessitates the mental. (2) captures an important fault line in the debate between physicalists and dualists, over whether the mental exists ‘over and above’ the physical (Weir 2023). Whereas the physicalist holds that the physical *suffices* for the mental, the dualist maintains that the physical does *not* suffice for the mental, because the mental is *sui generis* and exists ‘over and above’ the physical. Indeed, many enthusiasts about grounding hold that true grounding claims imply metaphysical necessities (Audi 2012; Bennett 2017; Correia 2014; DeRosset 2013a; Fine 2012; Trogdon 2013; Dasgupta 2014). If ground physicalists are to capture this core commitment of physicalism, then they must maintain that (1) implies something along the lines of (3):

(3) It is metaphysically necessary that if Π obtains, so too does [s].⁴

5.3 Metaphysical Explanation

How can we know or have a justified belief whether ground physicalism is true? Even a cursory look at the literature on grounding suggests that the key to the epistemology of grounding lies with *metaphysical explanation*. An *explanation* is a set of propositions that explain some explanandum by reference to some explanans (or explanantia), and a *metaphysical explanation* is a non-causal account of what makes something the case, or of what something consists in (deRosset 2023).⁵ Metaphysical explanations and grounding relations are generally thought to go hand in hand. Some theorists (the ‘unionists’) go so far as to suggest that the grounding relation is itself a distinctive kind of metaphysically explanatory relation (Dasgupta 2014; Fine 2001; Rosen 2010; Litland 2015). Others (the ‘separatists’)⁶ maintain that grounding is a metaphysical determination relation that ‘backs’ constitutive explanations (Audi 2012; Trogdon 2013). I will not take a stand on this issue. Rather, I will pursue a point that is suggested by both approaches: that metaphysical explanation is crucial to the *epistemology* of ground.⁷

Under what conditions does a metaphysical explanation provide justification for believing that an objective grounding relation obtains? I propose

two adequacy constraints on metaphysical explanation which, if unmet, fail provide such justification. The first constraint stems from the transitivity of ground: If $[p]$ grounds $[q]$, and $[q]$ grounds $[r]$, then $[p]$ grounds $[r]$. This, it is widely held, implies that metaphysical explanation is also transitive: if $[p]$ fully explains $[q]$, and $[q]$ fully explains $[r]$, then $[p]$ fully explains $[r]$. This can be converted into an adequacy constraint on metaphysical explanations (where Γ is a set of facts):

TRANSITIVITY: An explanatory hypothesis of the form ‘ $[p]$ is grounded in Γ ’ is adequate only if for every $[q]$, such that $[p]$ grounds $[q]$, Γ explains $[q]$.

The transitivity of ground is widely accepted (Correia 2014; Fine 2012; Rosen 2010). And if grounding is transitive, then it is difficult to see how one could deny TRANSITIVITY.⁸ For if one found that one’s explanatory hypothesis did not satisfy TRANSITIVITY, one would have reason to think that the grounds it cited were at the very least not the full grounds of the explanandum.

The second constraint on metaphysical explanation stems from the results of the previous section: if physicalism implies that all facts supervene on the physical, then at the very least, *physicalist* grounding claims must imply metaphysical necessities. This places a constraint on physicalist explanations: they must explain these necessities. For, suppose we find that as a matter of fact, whenever Π obtains, so too does $[s]$. How are we to tell whether this correlation holds with metaphysical necessity, rather than merely contingently? It seems we need some further reason to think that if Π obtains, then $[s]$ *must* obtain, that it is impossible for Π to obtain without $[s]$. If metaphysical explanation is to be our epistemological guide to ground, then the physicalist must explain this metaphysical necessity. This suggests the following constraint on physicalist metaphysical explanations:

NO GAPS: A physicalist explanatory hypothesis of the form ‘ $[p]$ is fully grounded in Γ ’ is adequate only if it suffices to explain what makes it the case that, necessarily, if Γ is true, then so is $[p]$.⁹

How can metaphysical necessities be explained? There are, to be sure, several ways. First, as Kripke (1971, 1980) showed, metaphysical necessities can be explained by identities. This is because, where a and b are rigid designators:

If $a = b$, then necessarily, $a = b$.

However, since many ground physicalists reject the mind–brain identity theory, they cannot appeal to identities to explain the metaphysical necessity

of their grounding claims (Bennett 2017; Dasgupta 2014; Schaffer 2021). So, I will set this mode of explanation aside here.

Another way to explain metaphysical necessities is by appeal to logical, a priori, or conceptual necessities (Chalmers and Jackson 2001). However, as previously noted, many physicalists reject the inference from conceivability to possibility. So, though I am sympathetic to this style of explanation of metaphysical modality,¹⁰ I set it aside here, since this route to metaphysical explanation is not available to many ground physicalists.

One attractive thought is that metaphysical necessities may be explained by essences (Fine 1994). For instance, in Fine's framework, what it is for [p] to be metaphysically necessary is for [p] to be either an essential truth or entailed by an essential truth, and what it is for [p] to be metaphysically possible is for [p] to be compatible with all of the truths about essence.¹¹ This can be combined with an analytic essentialist approach to the epistemology of modality, according to which our primary route to knowledge of modality is via knowledge of essence: we can come to know that [p] is metaphysically necessary by deducing [p] from our knowledge of essence (Hale 2013; Lowe 2012; Vaidya 2018; Vaidya and Wallner 2021). This suggests a model of metaphysical explanation according to which one explains why [p] obtains by subsuming it under a covering law. In the present context, however, the covering laws are not contingent laws of nature, but general truths about essence (Rosen 2017a). For instance, for (1) to be part of a satisfactory metaphysical explanation of [s], (3) must be deducible from what we know of the essences of the constituents of Π or [s]. Since (3) has a constituent—[s]—that is not a physical fact, but a semantic one, and since physicalism implies that physical objects and properties do not have semantic essences, (3) must lie in the essence of some constituent of [s]. This suggests that a satisfactory physicalist, metaphysical explanation of [s] will have to take the following form:

E1. It lies in the essence of [s] that necessarily, if Π obtains, then so does [s].

E2. [s] is fully grounded in Π .

Paradigmatic cases of grounding seem to have this form, even if the essential truth from which the grounding claim may be derived is often left implicit: [p] grounds [p \vee q] because it lies in the nature of disjunction that if [p] obtains, so does [p \vee q]; the fact that the rose is scarlet grounds the fact that it is red, because it lies in the nature of being scarlet that necessarily if something is scarlet then it is red (Rosen 2017b: 161–162). Even if the facts about essence are left implicit, they boost the power of grounding explanations. Furthermore, there are no other explanatory resources available to the ground physicalist who has already eschewed explanation by appeal to identities or logical, a priori, or conceptual necessities.

What about general metaphysical laws?, you ask. For instance, Schaffer (2017, 2021) has argued that all particular grounding claims are backed by primitive, metaphysical grounding laws (see also Moran 2023; Rosen 2010). These laws are primitive in the sense that they are not grounded in anything more fundamental, and they are metaphysically necessary in the attenuated sense that they are true at all logically possible worlds that share metaphysical laws with our world. Crucially, there are no constraints on the metaphysical laws beyond those imposed by logic and our concepts. So, there are logical and conceptually possible worlds that differ from our world in their metaphysical laws. In this framework, metaphysical explanation takes the following form:

M1. It is a metaphysical law that, necessarily, if Π obtains, then so does [s].

M2. [s] is fully grounded in Π .

The trouble with this approach is that it does not explain (3), but simply restates it and calls it a law. This begs the question against the dualist, who claims that the relations between the physical and the semantic are mediated by contingent laws. Even if M1 can be explained by appeal to a more general metaphysical law, the question arises why we should view the more general law as metaphysically necessary, rather than contingent.

Schaffer might argue that the explanatory buck must stop somewhere, so why not with metaphysical laws? After all, the dualist postulates contingent psychophysical laws, for which no further explanation is provided. However, contingent facts, including contingent laws, are not apt for further metaphysical explanation, precisely because they are contingent, and thus in a sense arbitrary. If [p] is contingent, it just *happens* to be the case that [p]. Things could have been otherwise. In contrast, metaphysical necessities cry out for metaphysical explanation precisely because they cannot be arbitrary: if [p] is metaphysically necessary, it *had* to be the case [p]. (Levine 2018).

In order to make vivid just how unsatisfactory explanation by metaphysical law is, consider the case of mereological composition, which Schaffer claims to be mediated by metaphysical laws. He writes:

My second reason for claiming a mereological gap between the H, H, and O atoms and the H₂O molecule they compose is that, even if the H, H, and O atoms compose something, it remains opaque *what they compose*, and in particular whether their fusion has the right sort of nature to count as an H₂O molecule. Even given mereological universalism, the most that follows is that there is a fusion of the H, H, and O atoms. But for all classical mereology is concerned, that fusion could be a cabbage.

(Schaffer 2017: 7)

Now, in Schaffer's framework, if H, H, and O atoms could compose a cabbage, this implies that there is a logically possible world in which it is a metaphysical law that H, H, and O atoms compose cabbages. Let us call that world *Cabbage World*. To be clear, it is not just that the inhabitants of Cabbage World *call* fusions of H, H, and O atoms cabbages, but that every time two Hs covalently bond with an O, they compose a cabbage—presumably, replete with cabbage DNA, cellulose, cabbage leaves, and so forth. If you open a tap in Cabbage World, cabbage comes out. Humans in Cabbage World are largely composed of cabbage. You get the picture. Now, the metaphysicians in Cabbage World are puzzled by this phenomenon. They ask why it is that every time H, H, and O atoms covalently bond, it forms a cabbage, replete with cellulose, cabbage DNA, leaves, and so forth. What puzzles them is where all that other stuff comes from, how it could emerge from the fusion of H, H, and O atoms alone. Schaffer's answer is that it is a metaphysical law at Cabbage World that necessarily, whenever H, H, and O fuse, their fusion composes a cabbage. But this answer is not likely to relieve the metaphysicians of their puzzlement. The reason, in my view, is that it lies neither in the nature of cabbage nor in the nature of fusions of H, H, and O atoms, for cabbage to be composed of no more than fusions of H, H, and O atoms. The metaphysical law lacks explanatory power because it is not grounded in essential truths. By the same token, the appeal to a metaphysical law to explain why it is that fusions of H, H, and O atoms compose H₂O molecules at our world is equally devoid of explanatory power. What explanatory power it has is derived from the obvious fact that if composite objects such as H₂O molecules exist, it lies in their nature to be composed of nothing more than H, H, and O atoms.

At this point, a worry might crop up. I have argued that for the ground physicalist who rejects conceptual analysis, the essentialist framework provides the only route to a satisfactory metaphysical explanation of the semantic facts. But I haven't yet said anything about how we can know or be justified in believing facts about essence. If that requires conceptual analysis, then it too is unavailable to the physicalist. However, even if our concepts may be a guide to knowledge of essence in some cases (Hale 2013), it is arguably not the only source of knowledge of essence. In the case of cabbage, for instance, our knowledge of its essence is largely *a posteriori*. Here too, we are plausibly guided by explanatory considerations in determining which properties are essential to a kind. For instance, Godman et al. (2020) argue that essences are 'super-explanatory' in that the essential properties of a kind are common to all typical instances of the kind and explain all the other properties that are common to those typical instances. This suggests a heuristic: we have reason to think that a property is essential to a kind if it is common to all instances of the kind and it explains the other properties that are shared by typical members of

the kind. This is the sort of a *posteriori* consideration that leads us to think that having cabbage DNA may be essential to being a cabbage, but being a fusion of H, H, and O atoms is not.

What about semantic properties which—despite all this talk of cabbages—are the main topic of this chapter? It hardly seems plausible that we know the essences of semantic properties *a posteriori*. You don't need to conduct an empirical study to know what you are thinking, or what you understand a word to mean. So, knowledge of semantic properties is plausibly *a priori*. However, it is not plausible that conceptual analysis is the only or even the primary route to knowledge of the essences of semantic properties. The reason is that to analyse a concept *C*, one must grasp some further concepts $C_1, C_2, C_3 \dots C_n$, which figure in the analysans: the necessary and sufficient conditions for something to fall under concept *C*, or the application conditions of *C*. This gives rise to an analytic circle. If one is to break into that circle, one must have some way of coming to know the essence of a semantic property without analysing concepts. I suggest that, as with phenomenal properties, we know the essences of the semantic properties of our own thought and understanding simply by virtue of instantiating them and reflecting on their natures (Moran 2023).

5.4 The Weak Normativity of Intentionality

Kripke's (1982) discussion of Wittgenstein's rule following considerations is a *locus classicus* both for the claim that meaning is normative and for an argument against physicalism based on that claim. At the conclusion of his discussion of dispositionalism, the view that the meaning is grounded in a speaker's dispositions, Kripke says (1982: 37):

The point is *not* that, if I meant addition by '+', I *will* answer '125', but that, if I intend to accord with my past meaning of '+', I *should* answer '125'. . . . The relation of meaning and intention to future action is *normative*, not *descriptive*.

Though Kripke's discussion explicitly targets dispositional accounts of understanding of meaning, it is clear that his arguments have implications for physicalism about mental content more broadly (Boghossian 1989; Hattiangadi 2007). And though Kripke spends considerable time discussing the dispositional theory, it is clear that he takes the argument that he mounts against dispositionalism to generalize to physicalism as such, since he ultimately reaches the sweeping conclusion that there 'can be no such thing as meaning anything by any word' (Kripke 1982: 55). Unfortunately, he does not spell out explicitly how he takes the general argument against physicalism to go.

In previous work (Hattiangadi 2007), I drew inspiration from meta-ethics to reconstruct a general argument against physicalism based on the claim that intentionality is normative. That reconstruction built on Mackie's (1977) 'queerness' argument: if there are moral facts, they are *robustly normative*, and since robustly normative facts are irreducible to the natural facts, they are too 'queer' to be inadmissible to any respectable ontology (Mackie 1977). In light of the queerness argument, I and other commentators reconstructed Kripke's general argument against physicalism as turning crucially on the claim that meaning and content are robustly normative, on which much of the subsequent discussion has focused (Boghossian 1989; 2003; Brandom 1994; Glüer and Wikforss 2009; Hattiangadi 2006, 2007; Wedgwood 2009; Whiting 2007; Williams 2020). The weak normativity of intentionality and its significance have not been fully appreciated.¹²

Let me now turn to the distinction between robust and weak normativity. To say that some fact [p] is *robustly normative* is to say that [p] is *prescriptive*, and its normative authority is *objective*. A fact is prescriptive just in case among its constituents are such properties as rightness, wrongness, goodness, badness, obligation, prohibition, permission, virtue, vice, or fittingness.¹³ A prescriptive fact has *objective* normative authority for an agent just in case its normative authority is not grounded in the subjective mental life of any agent, by being accepted or favoured by the agent, or being treated as a convention in the agent's community. If the fact that Maya ought to do A is objective, then Maya ought to do A regardless of whether she approves of doing A, whether doing A satisfies her interests, or whether doing A conforms to social norms or conventions that are accepted and enforced in her community.¹⁴ If Maya has an objective normative reason to do A, then she has that reason whether or not she is aware of it or recognizes its importance.

Robust normativity can be contrasted with weak normativity, which is characterized by *subjective action-guidance*. The content *p* has the potential to *guide* an agent's action in that her attitudes towards *p* have the potential to contribute to both causing and making sense of her actions, as viewed from her own, subjective point of view. I take action-guidance to be a kind of normativity because it involves *reasons*, albeit subjective rather than objective ones. Whereas an objective reason to do A may be thought of as a consideration that as a matter of fact justifies or supports doing A, a subjective reason to do A may be thought of as a consideration that an agent *takes* to support doing A. For example, if Maya goes to the cupboard because she believes there is chocolate there, her belief represents one of the considerations she takes to support her going to the cupboard. If Maya is mistaken in thinking that there is chocolate in the cupboard, she does not have an objective reason to go there, but she still has a subjective one.

Moreover, weak normative authority is grounded in the subjective states of agents. A content has the potential to guide an agent's actions by

virtue of being the content of one of the agent's attitudes. The proposition that there is chocolate in the cupboard cannot causally engage with the machinery of Maya's action until she takes some attitude towards it. Nor can the contents of Maya's attitudes make sense of her actions from her point of view unless they are accessible to introspection or self-report. For a content to represent *Maya's* reasons, a consideration that *she* takes to speak in favour of acting in certain ways, she must at least be capable of being introspectively aware of it. This does not preclude Maya from acting on the basis of dispositional attitudes, of which she is not consciously aware in acting, so long as she could be introspectively aware of the contents of those attitudes, were she to reflect on them. However, explanations of Maya's behaviour that appeal to wholly unconscious drives or sub-personal states that are inaccessible to introspection or self-report cannot represent Maya's *subjective* reasons, what she herself takes to speak in favour of acting as she does. Such states or processes may causally explain Maya's actions, but they do not make those actions intelligible from her subjective point of view.¹⁵

With the distinction between robust and weak normativity in place, let me turn to my main claim: that it lies in the essences of meanings and contents to have correctness conditions, and that this grounds their potential to represent subjective reasons and thereby rationalize action. Boghossian captures this insight in the following passage:

Suppose the expression 'green' means *green*. It follows immediately that the expression 'green' applies *correctly* only to *these* things (the green ones) and not to *those* (the non-greens). [This] fact. . . implies. . . a whole set of *normative* truths about my behaviour with the expression: namely, that my use of it is correct in application to certain objects and not in application to others.

(Boghossian 1989: 513)

My claim here is that it lies in the essence of understanding 'green' to mean *green* that one takes 'green' to apply correctly to the green things and not to the non-greens. This might be instantiated by a mental representation that one has that corresponds to the term 'green' and which, by one's own lights, applies correctly to the green things and not the non-greens. When one instantiates this property, and reflects on its nature, one can thereby come to know that it lies in the essence of meaning *green* by 'green' that it applies correctly to something if and only if it is green. Of course, one may not be able to express this knowledge by giving a definition of the word 'green' using different terms. One may not even be able to express this knowledge in words at all. For instance, a child who understands the English word 'green' to mean *green* may have an associated mental representation that, by her lights, applies correctly to something iff it is

green, without understanding words such as ‘correct’ or ‘means’ which are necessary to explicitly state what she knows.

The claim that meaning and content essentially involve correctness conditions strikes me as virtually self-evident. And I am not alone. Though philosophers disagree about the precise form that correctness conditions take—whether semantic correctness patterns with truth or warrant¹⁶—the claim that correctness conditions are essential to content is viewed by many as platitudinous (Boghossian 1989; Blackburn 1984; Bykvist and Hattiangadi 2007; Gibbard 2003; Glüer and Wikforss 2009; Glüer et al. 2023; Hattiangadi 2007; Miller 2021; Verheggen 2011; Whiting 2007).

Though seemingly self-evident, I can offer two further reasons for thinking that correctness conditions are essential to content. First, correctness conditions individuate contents. If one takes ‘green’ to apply correctly to something if and only if it is red, one does not take ‘green’ to mean *green*, one takes it to mean *red*. If one does not take ‘green’ to have any correctness conditions at all, one does not take ‘green’ to mean anything at all. The same holds for belief. The content one believes is individuated by the correctness conditions that one takes one’s belief to have.

Second, the correctness conditions of a content are ‘super-explanatory’: the correctness conditions of the content that *p* are shared by every thought or utterance that has the content that *p*, and they explain the other properties that are common to instances of that content, such as their potential to make sense of an agent’s actions. The fact that one understands ‘green’ to apply correctly to something if and only if it is green figures in the explanation of why one uses the term ‘green’ as one does. Similarly, the potential for the belief that *p* to rationalize action derives from its correctness conditions, from the fact that it is correct if and only if *p* (Boghossian 2003; Gibbard 2003, 2012). For instance, the correctness conditions of Maya’s belief that there is chocolate in the cupboard, together with her desire to eat chocolate, explain why that belief makes her action sensible from her point of view: it can be expected to satisfy her desire, given that her belief is true.

5.5 The Explanatory Gap

Let us now turn to consider the significance of the weak normativity of intentionality. I maintain that no physicalist explanation of the semantic facts can satisfy the constraints on metaphysical explanation that I put forward in Section 5.3.

First, consider NO GAPS. Recall that this constraint implies that the physicalist’s grounding claims, such as (1), must be accompanied by an explanation of metaphysical necessities, such as (3). I also argued in Section 5.3 that the physicalist who rejects explanations of necessities that are based on considerations to do with conceivability or identity must

explain (3) by deducing it from essential truths concerning some semantic properties or other. However, as I argued in Section 5.4, semantic properties are essentially weakly normative—it lies in their essences to have the correctness conditions that they do. If the essences of semantic properties are exhausted by their correctness conditions, then physical properties, which are essentially causal or structural, cannot explain them. If so, (3) is not deducible from truths regarding the essences of semantic properties.

The physicalist might argue that even if it lies in the essences of semantic properties to have correctness conditions, this is not the end of the story. Perhaps the property of having certain correctness conditions is grounded in the physical.¹⁷ If so, then the physicalist could claim that for an arbitrary fact $[s^*]$ of the form ‘Representation x is true if and only if p ’, there is some set of physical facts, Π , such that it lies in the essence of $[s^*]$, that:

- (4) It is metaphysically necessary that if Π obtains, then so does $[s^*]$.

Admittedly, this is a consistent physicalist position. However, there is reason to think that it is false. Recall the view that essences are super-explanatory. If this view is on the right track, then if (4) lies in the essence of $[s^*]$, the physical facts in Π must be common to and explain all of the properties typical of instances of the properties that constitute $[s^*]$. For instance, suppose that $[s^*]$ is the fact that Maya’s belief is true if and only if there is chocolate in the cupboard. Of course, the constituents of the *fact* that there is chocolate in the cupboard are physical. But these are not constituents of $[s^*]$, since $[s^*]$ could be true even if there is no chocolate in the cupboard. To explain $[s^*]$, Π must suffice to explain what makes it the case that Maya’s belief has the property of being true if and only if there is chocolate in the cupboard. The trouble is that this property too is weakly normative, since it has the potential to subjectively guide her action. Since this property is weakly normative, it cannot be explained by physical facts, which are essentially causal or structural.

By the same token, physicalist explanations of the semantic do not satisfy TRANSITIVITY. Since the correctness conditions of a content ground its potential to rationalize action, by TRANSITIVITY, physicalist explanations of correctness conditions must equally explain a content’s potential to rationalize action. Yet the physical facts, being essentially causal and structural, do not suffice to rationalize action. So, physicalist explanations of the semantic do not satisfy TRANSITIVITY.

The foregoing objections to physicalism rest on the assumption that cause and structure cannot explain weak normativity. This assumption can be defended with reference to Dennett’s distinction between sub-personal and intentional explanations of behaviour. In contrast to intentional explanations, which cite an agent’s subjective reasons for action, sub-personal explanations cite states that are inaccessible to introspection or self-report,

and thus causally explain, without rationalizing, an agent's behaviour (Dennett 1968). For example, consider Maya's going to the cupboard to get chocolate. A sub-personal explanation of this behaviour would cite such things as the firing of neurons in Maya's brain, and the biochemical changes in the muscles of her legs, which cause her to move towards the cupboard. It may even include the causal history of experiences with chocolate that led to her having brain states with the causal structure that they have. A sub-personal explanation such as this suffices for a detailed causal explanation of Maya's behaviour. But it doesn't explain what makes it the case that Maya has the subjective reasons that she does, nor why going to the cupboard seemed like a sensible thing to do, from her point of view. Why? Because Maya's subjective reasons are accessible to introspection and self-report, whereas her sub-personal states and processes are not. In general, even when an agent's behaviour is accompanied by reasons, a sub-personal explanation of that behaviour will not explain what makes it the case that the agent has the subjective reasons that she does. But since the physical facts are causal and structural, they will at best suffice for sub-personal explanations of behaviour, and will to that extent fall short of grounding states that do not only cause but also rationalize behaviour.

Perhaps it will help to illustrate the foregoing points by briefly considering a toy physicalist explanation of intentionality, such as the dispositionalist view that preoccupied Kripke (1982). In the present context, we can characterize the view as follows, where Δ is a set of dispositional facts:

- D1. It lies in the essence of [s] that, if Δ obtains, then so does [s].
- D2. [s] is fully grounded in Δ .

For example, suppose that it is a semantic fact that Maya means addition by 'plus'. By D2, this fact is grounded in the set of facts concerning her actual dispositions for the use of 'plus'. By D1, it lies in the essence of meaning addition by 'plus' that anyone who shares Maya's actual dispositions means addition by 'plus'. Kripke's argument against dispositionalism can be reconstructed as stemming from the weak normativity of meaning and content: the facts about Maya's actual dispositions do not suffice to explain what constitutes her taking 'plus' to mean addition rather than some bizarre function, f , that is co-extensive with the addition function for small numbers, but deviates from it for numbers too large for Maya to add. Since Maya's actual dispositions are compatible with her taking 'plus' to denote f , it is not the case that anyone who shares Maya's actual dispositions means addition by 'plus', and this falsehood does not lie in the essence of the semantic fact regarding what Maya means. Indeed, given that dispositional facts are causal, and inaccessible to introspection or self-report, the dispositional facts are compatible with Maya's not taking 'plus' to have any correctness conditions

at all, and thus meaning nothing by it. This gives us reason to think that semantic properties do not have dispositional essences.

Furthermore, the dispositionalist's explanation fails to satisfy TRANSITIVITY. Suppose, for instance, that Maya is disposed to give the answer '125' when asked to add 57 and 68. This dispositional fact suffices to provide a causal explanation of her behaviour, but it does not explain why giving that answer seemed like a sensible thing to do, from her subjective point of view. As Kripke points out, her behaviour could equally be rationalized by her understanding 'plus' to denote f . Indeed, insofar as they are purely causal and structural, the dispositional facts fail to explain what makes it the case that Maya was guided by her understanding of 'plus', rather than no understanding of it at all.

5.6 Conclusion

I have argued here that there is an explanatory gap between the physical facts and the semantic facts that stems from the failure of physicalist forms of metaphysical explanation, rather than from the failure of conceptual analysis. Though there are no doubt many retorts physicalists will be inclined to make, the foregoing arguments offer new reasons to think that the semantic is not fully grounded in the physical.¹⁸

Notes

- 1 Though the relata of the grounding relation may be objects, properties, or facts, I will for simplicity focus on grounding relations between facts construed as true propositions. I use square brackets to denote facts.
- 2 Transitivity: if x grounds y and y grounds z , then x grounds z . Note that Schaffer (2012) argues that transitivity fails if grounding relations are non-contrastive. He proposes to preserve 'differential transitivity' by supposing that grounding relations are at least implicitly contrastive, taking the following form (Schaffer 2012: 130): The fact that ϕ rather than ϕ^* grounds the fact that ψ rather than ψ^* .
- 3 Though physicalism is widely thought to entail the supervenience of the mental on the physical, by both physicalists and anti-physicalists alike (Block and Stalnaker 1999; Chalmers 1996; Jackson 1998; Kim 1993; Lewis 1994; Melnyk 1994; Stoljar 2010), some physicalists have recently called this into question (Montero 2013; Moran 2022). Unfortunately, I do not have the space to discuss these dissenting opinions here.
- 4 Note that physicalism is often formulated in terms of a global supervenience thesis, while (3) is a local supervenience thesis. A physicalist who endorses global supervenience can simply restrict (3) to the set of possible worlds that are minimal physical duplicates of our world, i.e., which contain no non-physical 'extras'.
- 5 This is not to say that grounding relations do not relate sentences or propositions. That would preclude sentences or propositions from being grounded in anything else.

- 6 The ‘unionist’/‘separatist’ terminology is due to Raven (2015).
- 7 Critics of grounding, such as Thompson (2016) and Maurin (2019), object to the unionist’s attempt to analyse ground in explanatory terms, or the separatist’s attempt to analyse metaphysical explanation in terms of ground, or both. An important challenge for both projects is to harmonize the interest-relativity of explanation with the presumed objectivity of ground (see Skiles and Trogdon 2021 for an attempt to do so in separatist terms). This poses no challenge to viewing grounding explanation as an epistemological guide to grounding.
- 8 See note 2 for a brief discussion of Schaffer (2012)’s claim that the transitivity of ground fails in certain cases.
- 9 This principle is an adaptation of deRosset’s (2013b) ‘Determination Constraint’. The main differences are that (i) NO GAPS is formulated in terms of facts and (ii) NO GAPS requires that the metaphysical necessity be *explained* by any complete explanatory hypothesis, whereas deRosset’s Determination Constraint requires only that grounds *in fact* metaphysically necessitate what they ground.
- 10 I have appealed to a conceivability–possibility link to argue that the moral facts don’t supervene on the natural facts (Hattiangadi 2018).
- 11 That is, I interpret Fine to be defending the non-reductive view that metaphysical necessities are not identical to facts about essence but are grounded in them. See Wallner and Vaidya (2020) for the distinction between reductive and non-reductive Fineanism.
- 12 An exception is Verheggen (2011). However, Verheggen argues that what she calls ‘trivial normativity’ (weak normativity) gives rise to robust normativity in the case of meaning because ‘statements about the meaning of terms always imply hypothetical prescriptions that . . . speakers *must* take into account’ (Verheggen 2011: 563) and that it is for this reason that meaning and intentionality cannot be reduced to the physical. In contrast, I argue here that weak normativity in and of itself poses a threat to naturalism, without giving rise to any kind of robust normativity. Moreover, I argue against non-reductive forms of physicalism, which Verheggen is sympathetic to (Sultanescu and Verheggen 2019).
- 13 ‘Prescriptive’ has a narrower use, as concerning what some agent ought to do. In debates about the normativity of meaning and content, ‘normative’ has often been understood to be equivalent to the narrow sense of ‘prescriptive’, so the primary focus of these debates has been on whether facts about meaning or content imply *oughts* (Boghossian 2003; Bykvist and Hattiangadi 2007, 2013; Gibbard 2003, 2012; Glüer and Wikforss 2009; Hattiangadi 2006, 2007; Miller 2021; Wedgwood 2013).
- 14 Note that this is compatible with rightness being grounded in facts about agents’ subjective states, such as A’s maximizing pleasure or desire-satisfaction.
- 15 The fact that meaning and content are weakly normative does not imply that they are robustly normative (see Bykvist and Hattiangadi 2013; Dretske 2000; Fodor 1990; Hattiangadi 2006, 2007, 2009; Glüer and Wikforss 2015; Glüer et al. 2023).
- 16 For simplicity, I will assume that correctness conditions are truth conditional. However, nothing of substance hangs on this simplification.
- 17 I am grateful to Cian Dorr for pointing this possible response out to me.
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