The Dispositional Nature of Phenomenal Properties

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Abstract

According to non-reductive physicalism, mental properties of the phenomenal sort are essentially different from physical properties, and cannot be reduced to them. This being a quarrel about properties, I draw on the categorical / dispositional distinction to discuss this non-reductive claim. Typically, non-reductionism entails a categorical view of phenomenal properties. Contrary to this, I will argue that phenomenal properties, usually characterized by what it is like to have them, are mainly the manifestation of dispositional properties. This paper is thus divided into two parts. In the first part, after tracing a working distinction between categorical and dispositional properties, I argue that there is a form of incoherence looming behind the idea of taking phenomenal properties as categorical. In the second part, I argue in favor of the view that phenomenal properties are dispositional properties with an essential manifestation. This interpretation allows us to broaden dispositionalism so as to include the sciences of mind, thus ultimately favoring a physicalist view on the mind.

AQ1

Keywords

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Quidditism
Ramseyan humility

1. Introduction

In his influential *The Conscious Mind*, David Chalmers has argued that our mental life can be characterized by the occurrence of two kinds of properties. On the one hand, we have mental properties of the phenomenal sort, those typically captured by the expression "what it is like to have *x*" (Nagel 1974); on the other hand, we have psychological properties, generally framed in functional terms, such as reasoning or memorizing. Chalmers (1996, p. 21) thinks that these two kinds of properties exhaust the mental, with the proviso of some relational properties, those that connect mental properties to environmental conditions.[1]

In metaphysics, a distinction between two kinds of properties has also been advanced: dispositional properties are contrasted with categorical properties. This distinction, however, is more difficult to trace. Broadly speaking, dispositional properties are caught by their causal roles while categorical properties are what they are independently of the relations they are involved in. David Armstrong's way of casting this distinction is to hold that the nature of categorical properties is distinct from the powers these contingently bestow, while the nature of dispositional properties is given by their interactions, actual or potential (see Armstrong 1989).

This latter distinction intersects with the former one in that those who favor Chalmers' approach, take phenomenal properties to be categorical. However, it is my contention that phenomenal properties cannot be conceived as categorical properties. Rather, these properties should be viewed as the manifestation of dispositions, thereby allowing for a functional reading, or so I shall maintain. My first aim, then, is to argue that there is a form of incoherence looming behind the idea of taking phenomenal properties as categorical. In the second part of the paper, I provide reasons to support the view that phenomenal properties are the manifestation of dispositional properties that are capacities. The whole discussion is framed in the context of Lewis' argument for Humility, which establishes categoricalism as a general perspective. By embracing a dispositional view of phenomenal properties, Humility is blocked.

2. The Dispositional/Categorical Distinction

The distinction between dispositional and categorical properties is much debated. *Prima facie*, a categorical property, such as shape or charge, is an intrinsic property independent of the causal relations that its bearers may manifest or, if these relations are captured in terms of the laws of nature, independent of the prevailing laws of nature. Armstrong has offered a robust view of categoricity: "natural properties have a nature of their own, and it is at least metaphysically possible [...] that the same properties are associated with different causes and effects, that different properties are associated with the very same causes and effects, and even that there be epiphenomenal properties, ones that bestow no causal powers at all on the particulars that have them" (Armstrong 1999, pp. 26–27). Categorical properties are thus essentially independent of other properties, whether categorical or dispositional, and of the laws of nature.[2] These are considered *quiddities*, self-contained properties, having no essential relations. I propose to summarize this view as follows: a categorical property is one whose typical conditions of stimulation and manifestation do not determine its identity.

On the contrary, a property is dispositional if its identity is captured via typical conditions of manifestation, and possibly stimulation as well. Quite naturally, many people have thought it possible to capture these conditions by means of a conditional / counterfactual analysis.[3] Consider fragility: something is fragile if, say, after being struck (stimulus), it shatters (the manifestation). Stimulus and manifestation are the causal roles by which the property of being fragile is caught, and the analytical device for capturing these properties is some counterfactual. A dispositional property is thus individuated by its position in a net of causal roles. Alexander Bird has characterized these properties thus: "The essential nature of a property is given by its relations with other properties. It wouldn't be that property unless it engaged in those relations". (Bird 2007, p. 2) However, several objections have been leveled against the counterfactual analysis (cf. Martin 1994; Bird 1998), resulting in modifications (Lewis 1997) or revisions (Choi 2011a, b).[4] I'm not adjudicating the dispute here. What is relevant to my aims is to have a work-in-progress distinction so as to consider the acceptability of taking phenomenal properties to be categorical properties. Hence, I propose to summarize this view as follows: a dispositional property is one whose identity is dependent on (some of) its causal relations.

As we saw, Chalmers proposes considering mental properties to be either psychological, in which case a functional analysis suffices, or phenomenal, in which case they cannot be captured in this way. Surely, there can be mental states characterized by both psychological and phenomenal properties, such as the spatial feature of phenomenal experiences or the qualitative character of our thoughts (Horgan and Tienson 2002), but the main issue Chalmers has stressed is that phenomenal properties cannot be reduced to psychological or, ultimately, to physical properties, because these cannot be analyzed in functional, i.e. causal role, terms. Chalmers' view can be broadly considered non-reductionist in the following sense: phenomenal properties are autonomous from functional properties while being, at the same time, causally efficacious. Autonomy here means, as Kim (1998) puts it, that phenomenal properties cannot be *functionalizable*, that is, cannot be analyzable and decomposed in functional and non mental terms. Alternatively, even if not equivalently, autonomy can be interpreted in terms of type difference: mental types are not identical to physical types. To give a sense of this problem consider perceptual properties.

When I perceive *x*, there is a functional state which is caused by having *x* in clear view, and this in turn causes the belief that *x* is present. At the same time, there is a specific phenomenal take on *x* which the very sensation of perceiving *x*, in those specific circumstances of perception, engenders. While we can analyze the perceptual component of this state in functional terms, we are blocked from doing the same for the phenomenal component, because of its intrinsically subjective character (cfr. Block 1980): there is something that it is like to perceive *x* that cannot be grasped in functional terms. So, the question is: what type of properties are phenomenal properties?

3. Phenomenal Properties and the Case of Zombies

If dispositional properties are functional properties, as argued by Mumford (1998), since phenomenal properties cannot be captured by the functional approach, they can't be dispositions. At the same time, rejecting the functional interpretation of phenomenal properties altogether entails, at least *prima facie*, considering phenomenal properties not to be *both* dispositional and categorical, because phenomenal properties are assumed to be incompatible with functional properties by non-reductivists.[5] Therefore, the best metaphysical construal for

phenomenal properties is considering them to be solely categorical properties. To evaluate this case, we need to take a deeper look at phenomenal properties.

Saul Kripke (1980) has famously argued that when it comes to pain and other sensations, appearance and reality coincide, in that there is nothing in the reality of pain which is not in its appearance, that is, in how it feels to the subject in pain. What causes a person to experience sensation S, or what sensation S causes in a person, is irrelevant to what it is like to have that sensation. Consequently, taking pain or any other sensation to be essentially characterized by some causal role, not only fails to capture its essence, but is simply incorrect: in the case of phenomenal properties it is conceivable that the causal roles involved may change while the sensation holds stable. In principle, it is possible for two subjects to instantiate the same type of phenomenal pain, say pain in an arm, with different causal roles, say because one is caused by a physical nocive stimulus and the other by some brain state, as occurs in phantom limb pain. The *phenomenal categoricalist*, as I will call a defendant of this view, insists that *no* roles are *essential* to pain, that is, no instance of pain must *necessarily* exhibit the roles in question, even if pain plays some causal role, and it is itself caused in one way or another. So, the phenomenal component is essential but non-essential roles are admitted.

The way in which Chalmers has argued for this view is apparent in his defense of the possibility of zombies. Here is why: zombies are hypothetical creatures which are precisely like us in all physical respects but completely devoid of phenomenal properties; there is nothing which it is like to be them.[6] One's zombie counterpart speaks and behaves exactly like its conscious original in the same circumstances, although it has no phenomenal properties at all. Accepting the possibility of zombies, I argue, is not compatible with a dispositional interpretation of phenomenal properties. Let me argue for this.

My zombie counterpart is *ex-hypothesi* dispositionally identical to me. So, he would behave and react alike in similar circumstances. If identity of disposition entails identity of properties, the zombie has the same properties I have. However, being deprived of phenomenal properties it has different properties. Hence, by *modus tollens*, it has different dispositions. But this is not the case *ex-hypothesi*. Therefore, phenomenal properties are not dispositions. Conversely, if the zombie and I share all and only the same causal roles, then

we share all the properties, including phenomenal properties; but this runs against the zombie assumption, according to which causal role identity doesn't entail phenomenal identity—which again demonstrates incompatibility. Therefore, the possibility of zombies is incompatible with considering phenomenal properties to be dispositional properties. As a further and well-known consequence, qualia do not supervene on physical properties. However, one can imagine the presence of alien or idle properties. If phenomenal properties were idle properties, they would play no causal role; in this case, they would not be dispositional properties. If they were alien properties, not present in our world but in some possible world, the problem reduces to these properties playing or not playing some causal role, so we are back to the previous condition. The two consequences already mentioned would apply, not modifying the gist of the issue.[7] So, phenomenal properties as categorical properties are not captured by the functional and causal role analysis that characterizes dispositional properties. Hence, and more in general, taking a realist attitude toward properties and aiming to defend a form of non-reductive physicalism makes the dispositional/categorical distinction and the interpretation of phenomenal properties as purely categorical a rather natural option.[8]

This is a welcome consequence for the phenomenal categoricalist. For categoricalism is based on severing the link between epistemology and ontology, along the lines suggested by Lewis. According to Lewis: "to the extent that we know of the properties of things only as role-occupiers, we have not yet identified those properties. No amount of knowledge about what roles are occupied will tell us which properties occupy which roles" (2009, p. 204). In other words: our knowledge of properties is limited to their causal roles, but this is perfectly compatible with these roles played by other properties, as Armstrong also maintained. So, epistemology cannot inform us about ontology. Consequently, Lewis suggests embracing Humility, an irremediable form of ignorance, and applying it not only to fundamental properties, but to most properties, and eventually to "a great range of less than fundamental properties, intrinsic and extrinsic alike", phenomenal properties included. Now, how does categoricalism fare given the kripkean view of phenomenal properties, the one usually embraced by many non-reductivists?

4. A Problem for Categorical Non-reductionism

As we saw, categoricalism entails Humility, the view that knowing the roles does not allow us to know the properties at stake. However, I think that Humility cannot be endorsed with respect to phenomenal properties. The reason for this, I shall argue, is that in the case of phenomenal properties the coincidence of appearance and reality, as defended by Kripke, can be expressed as the coincidence of *epistemology* and *ontology*, whose relation was severed by the categoricalist.

Consider the *epistemology* of pain. In the case of pain and other phenomenal states, the only epistemic access to them is *feeling* them. The epistemology of phenomenal properties, as Kripke suggests, is based on nothing but the tokening of the phenomenal property itself to a subject of experience. This comes close to the most natural reading of the "knowledge argument" (Jackson 1986): having a complete physical knowledge of colors, and the same holds for pain, does not give you any epistemic access to what it is like to see colors, or to feel pain, because there is only one way to have this knowledge: by experiencing it directly.[9] Such direct appraisal is a matter for many philosophical conundrums. Surely, several further epistemological steps can be taken to consider sensations, but acquaintance with one's sensations is the kind of phenomenon that anti-reductionists consider first and foremost. Sensations are those states that won't allow you to correct yourself on what you felt when you felt something. In a *motto*: in the case of pain, feeling pain *is* knowing pain.[10]

Let's now consider the *ontology* of pain. Kripke's argument says that there is nothing in pain which is not present in feeling pain: the reality of pain coincides with its being felt, and feeling pain is all there is to pain. More generally, it has been stressed that pain and all bodily sensations do not essentially refer to some further element in the world. One can feel pain in a limb whether one has or no longer has the limb in question, as with phantom limb pain. The two feelings—in a limb, and in a phantom limb—in principle could be swapped without any difference in phenomenal experience. So according to this view, feeling pain as a paradigmatic *quale* has, so to say, no "proto-intentional" role or component: it does not refer to anything else in the world, nor does it essentially represent the source of pain or its location. Pain originates and terminates in the feeling.[11] To put it in a *motto*, in the case of pain, feeling pain *is* being in pain.

The two *mottos*, "feeling pain *is* knowing pain" and "feeling pain *is* being in pain", are two sides of the same thesis if one holds, as Kripke has convinced many to do, that in the case of pain and other bodily sensations, appearance and reality coincide. If they coincide, then, in the case of pain, epistemology and ontology coincide as well: what one knows is what there is. So, it is part of this non-reductive view that epistemology and ontology coincide in this very case. At the same time, as we saw, the non-reductionist denies that phenomenal properties can be identified via causal roles, thus adopting categoricalism as well.[12] This coincidence is, somehow, admitted by Lewis himself in discussing phenomenal properties. Famously, Lewis pointed out the *Identification Thesis*, endorsed by the friends of qualia: "anyone acquainted with a quale knows which property it is" (Lewis 2009, p. 217),[13] a thesis that fits well with the metaphysics of phenomenal properties as I have interpreted it in the coincidence of ontology and epistemology. But such a view leads to a crucial difficulty for the non-reductionist embracing categoricalism.

On the one hand, categoricalism is committed to the assertion that there is nothing in our knowledge of dispositions that establishes a necessary connection to the nature of properties themselves: knowledge is severed from what there is; on the other hand, non-reductionism is committed to claiming that, in the case of pain and other bodily sensations, epistemology and ontology coincide. Categoricalism and non-reductionism, then, are not compatible with each other. It is not possible to defend categoricalism on phenomenal properties: *phenomenal categoricalism* comes close to constituting a self-contradiction.

The phenomenal categoricalist may react in two ways. The first reaction is that since phenomenal properties are known by acquaintance, identification is not done in terms of causal roles.[14] The link between epistemology and ontology would not be severed. This move entails admitting that phenomenal properties are metaphysically different from non-phenomenal properties, those captured via causal roles. Only the former allows us to grasp the ontology of what there is. How deep would this knowledge of the ontology be? It seems that such knowledge would be piecemeal, in that each single act of acquaintance would illuminate an isolated fragment of our ontology. But such a view conflicts with a second protest that the non-reductionist may advance, one that has been

voiced by Lewis himself: “the friend of qualia … could instead take issue with our assumption that O-language [the old language comprising common sense and observational sentences] suffices to express all possible observations. He could say that it does not suffice to express those observations that consist in gaining acquaintance with qualia” (2009, p. 217). Clearly, we can say more on pain than simply registering its intensity, location or extinction.[15] So, the very same phenomenal property, the one that would allow us to get a grip on ontology, is subject to further observations and inferences, epistemological steps that are usually expressed in terms of causal roles. Hence, the metaphysical conundrum that I raised above on the consistency of phenomenal categoricalism, would apply to the concept of pain itself: we would have a grip on ontology, because pain is known by acquaintance and not via causal roles, and we would not have a grip on ontology, because pain is also known via causal roles, and to these Humility applies.

The second reaction, on the categorical side, is one Lewis himself endorses: “As a materialist, I reply predictably, the Identification Thesis is false.” (Idib.) I support materialism as well, but rejecting the Identification Thesis is a move that is legitimate for the materialist but not available to the phenomenal categoricalist, because denying that thesis entails that people acquainted with phenomenal properties do not know what they are acquainted with, thus making the occurrence of qualia opaque to their bearers. As the phenomenal categoricalist could observe, Lewis (1980) thinks that “pain” is not a rigid designator, contrary to what Kripke thinks. Consequently, Lewis thinks that even if causal roles are only contingently related to pain states, these roles have some effect on the feeling: “Only if you believe on independent grounds that considerations on causal role and physical realization have no bearing on whether a state is pain should you say that they have no bearing on how the state feels” (Lewis 1980, p. 222). Since this is not the case with Lewis, while it is the case with Kripke, the two views part company. So, abandoning the Identification Thesis comes with embracing (at least partially) the view that phenomenal properties can be identified by their causal roles.[16]

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5. In Defense of a Dispositional Interpretation of Phenomenal Properties

Having maintained that phenomenal properties can't be categorical properties, in this second part of the paper I want to defend the idea that they are dispositions. In what follows, I shall argue that phenomenal properties are dispositions with an essential manifestation, a characteristic feeling.[17]

We saw that a dispositional property is one whose identity is dependent on its causal relations. What are the causal relations we should consider in the case of phenomenal properties, such as pain? It is an analytical truth that to feel something you must be *sentient*, that is, you must be an individual who *could* have feelings. In general, we say that if one can see then one is sensitive to light modulation, as one able to hear is sensitive to wave compression. Correspondingly, an individual that can feel pain is sensitive to certain inputs, either detected by nociceptors or other upstream nerves or determined by the condition of the brain.[18]

Let us say that a property that gives rise to a phenomenal experience, like feeling pain, reveals the phenomenal capacity toward the property in question, in short, the *P-capacity*. Consequently, *P-capacity* individuates the dispositional property that has feeling *P* as its *manifestation*, which constitutes the experience toward which the dispositional property tends. So, P-capacity, the dispositional property, has as its manifestation P, feeling pain, and the two form an essential relation. Bird (2007) already noticed that any dispositional property could not be the property it is unless it showed its specific manifestation, and Tugby (2013, pp. 456–457), has stressed that: "the very identity of a disposition is determined, at least in part, by its directedness towards a certain manifestation."[19] The proposal, then, is that pain is a dispositional property, a capacity, that has *that* feeling as its essential manifestation. Am I saying that pain is the disposition to feel pain? Here a semantic problem is present: we use "pain" to refer to the feeling. But what is this feeling the feeling of? It is the feeling of a proprioceptive situation related to our body (or to our body image, in the case of phantom pain). When we feel pain, it is the painfulness of the sensation in our body that we feel. Given its phenomenological salience, we usually consider the feeling to exhaust the reference of "pain"; what I argue is that the feeling is part of a more complex structure, a disposition with such-and-such manifestation. Taking pain to be solely the manifestation entails taking properties to be individuated as isolated items. Dispositionalism, sees them as

caught in terms of relations (see Shoemaker 1980), as we will see. For the moment, I remain neutral on how we should construe P-manifestations in physicalistic terms.[20]

Let me consider in more detail the notion of P-manifestation. I think that nothing qualifies as a pure manifestation, since manifestations determine further events and properties. Manifestations are not dead ends. Imagining pure manifestations would entail imagining "dispositional danglers" (to borrow from Feigl 1967), loose ends that give rise to nothing. These "pure manifestations" would be epiphenomena. Vice versa, manifestations can be considered to cause further dispositions because, if all properties caused manifestations and the latter were not doing any further causal work, properties would not form a causal net, but rather several singular causal relations, and the causal work would soon come to an end (cfr. Marmodoro 2014, 2017). After all, if this were not the case, the critical remark by Armstrong—dispositions are always packing but never travelling—and its reinterpretation by Mumford and Anjum – dispositions pass powers around—would be nonstarters. So, the P-capacity, a disposition, manifests in P, feeling pain, and P may trigger further capacities or dispositions, like P-reacting or the like.

P-manifestations, e.g. feelings of pain, are taken to be peculiar sensations: you cannot hallucinate or have an illusory pain, since it would be painful anyway. The qualitative character of phenomenal properties is supposed to hold stable across possible worlds: whatever feels like pain is pain, and pain feels like *that*, a knowledge we acquire by acquaintance. Now, Bird has suggested that a distinctive feature of powers is their *modal fixity*. According to Bird's view of dispositionalism: "the very same power could not have a different dispositional character or causal role: that character or role is fixed across possible worlds" (2016, p. 346). So, a power rigidly fixes its causal role. And, as Bird has recently stressed, a "power is a sparse property that has a dispositional essence" (2018, p. 249).

I need to sketch an argument to show that pain falls within the dispositional structure as described. What I suggest is that pain is a disposition with an essential manifestation, one that holds stable across possible worlds, thus qualifying as a power. Since the phenomenal quality of pain holds stable across possible worlds and since pain is a manifestation, hence a condition toward

which a disposition tends, and we have seen that it is essential to that disposition to tend toward its manifestation, then we should consider that *modal fixity* applies also to the causal roles that determine it or that it determines. Basically, you cannot have pain unless those causal roles are in play. To argue for this, and thus against the categoricalist (quidditistic) idea that there are no essential links between properties and the causal roles they are embedded in, here is an argument: (i) the feelings of pain, as the manifestations of the P-capacity, are essentially phenomenal and so modally fixed; (ii) the tendency of the P-capacity toward P-manifestations is such as to preserve the causal roles of P-manifestations; (iii) Therefore, the P-capacity inherits the modal fixity of its manifestation. The first premise meets Kripke's analysis: the character of phenomenal pain holds stable across possible worlds. Those who instantiate phenomenal pains are conscious creatures, such that their pain condition is such as to be under an unavoidable attentional focus: there are no unfelt pains. These creatures have *that* feeling, one that they have learned to know by acquaintance. So, to have P-manifestations a form of P-capacity is needed, and one that has those phenomenal features essentially.

The second premise connects to this; the character of pain is not isolated: it is analytically linked to the P-capacity inasmuch as feeling pain is determined by a set of causal roles, sometimes called a "causal profile". It is part of the scientific inquiry to determine which roles are shared by all the manifestations of pain, and how we should interpret them. But the search for these roles is guided by their phenomenology, which constitutes a net of *phenomenal* causal relations. Let us see why, taking a very emblematic case. Frequently, the case of phantom limb pain, *vis a vis* limb pain, is used as an example to show the unfeasibility of the project of embedding the feeling of pain into a net of physical causal roles. Since, it is argued, phantom limb and limb pain can be phenomenally similar but originate from physically different causal roles, pain cannot be identified with these roles. However, we can respond to this argument using its own standards.

Research is required to establish what the identity conditions for phenomenal types may be. Distinguishing phenomenal types is done by distinguishing powers: by distinguishing what causes and what is caused by a phenomenal type. Pains can be caused and extinguished, they can increase and decrease. So, pain itself has a *phenomenal* causal profile along with a physical causal profile.

For instance, having pain relieved is as much a phenomenal property as feeling pain itself is: you cannot hallucinate or have illusory pain relief. Pain in a limb and in a phantom limb have, as a matter of fact, quite different conditions for relief, conditions that can be considered in purely phenomenological terms. Phantom pain in a hand is relieved by looking at one's own stump in a semi-transparent mirror, which reflects the other hand, giving thus the "impression" of having, and moving, the amputated hand. This phenomenological impression relieves the phenomenology of phantom pain, which is not the case in limb pain (Ramachandran and Rogers-Ramachandran 1996).

Thus, there are different phenomenal-to-phenomenal causal roles that determine pain in a limb and in a phantom limb, and *these* contribute to determining different identity conditions for the phenomenal properties as such, because identity conditions are given by the *whole* causal profile of the property in question. The case of phantom pain has been taken as an isolated state; but dispositionalism sees properties as *relations*. But, it is not possible to consider them in isolation: there are not unrelated properties. Tentatively, we may say that P-manifestations have at least these effects: they cause avoidance attitudes, which can be behavioral or psychological, and result in an attentional focus on one's own body.[21] So, the modal fixity of pain determines the modal fixity of some of the causal roles it is embedded in, those that we capture in phenomenological terms. When this causal net of phenomenological relations is sufficiently complex and detailed, it imposes very strict constraints on the kind of creature that can manifest it, and on the overall causal roles, not only phenomenological but physical as well, that can realize the disposition. The modal fixity of the manifestation, the phenomenal causal roles, is inherited by the overall disposition, phenomenal plus physical, and this supports the conclusion argued for.

If this way of understanding pain is correct, then pain is a disposition, one that is caused by the stimulation of the corresponding P-capacity, that manifests in a very specific way, as a feeling, and leads to avoidance attitudes and attentional focus on the body. So, we have a dispositional construal of the capacity to feel pain, one that captures an essential net of properties, those that cause it and that it causes. This capacity can be interpreted as informing us about actual or potential damage to the body, but alternative interpretations are possible, for instance, that it constitutes a command as to what we should do (Klein 2015).[22]

If the argument is so far sound, what remains of quidditism and the ensuing Humility?

6. Taking Quidditism Away

As we have seen, the categoricalist argues that Ramseyan Humility impedes us from saying which property is really playing the causal role with which we are epistemically familiar. However, phenomenal properties are different in this case because, appearance and reality coinciding, the Identification Thesis can be embraced: by being acquainted with a quale we know what property is at stake. Therefore, if the Kripkean view on phenomenal properties is endorsed, along with the dispositionalist view on phenomenal properties, we can block Humility in this particular case. What I have argued for, is that the causal profiles of phenomenal properties are all we have to distinguish which kind of phenomenal type is occurring and this tells us which dispositional property is occurring. However, we can take a further step. In (2016) Bird argued that dispositionalism cannot grasp which are the fundamental powers, those that confer on their bearers the dispositions they have, because there are properties that cannot be individuated in dispositional terms and dispositional talk in general does not get the powers correctly. This entails that only fundamental natural properties are powers, while macro properties, those that play some role in explaining phenomena involving e.g. intentionality and free will, are not. In a more recent paper, Bird (2018) has argued that properties resulting from natural evolution, and mental properties as well, can be considered powers, even if these are macro-properties, i.e. supervenient properties. His idea is that these properties are powers because the role they play is "largely independent" of the details of the realizers that realize it.[23] A similar line of reasoning can be applied here.

Pain, as a P-manifestation, is to be considered a power because you can have pain only from a phenomenological perspective. There is no further way of individuating pains, because phenomenology cannot be decomposed into non-phenomenological components without losing sight of why the causal roles individuated are the right ones. The identity of the P-capacity is given in terms of its position in a net of causal roles, phenomenologically individuated. So, the P-capacity inherits the rigidity of phenomenal experience, since the P-capacity is the one that is causally responsible for the P-manifestation occurring.

Consequently, phenomenal properties are powers of a phenomenal sort. Insofar as they are the properties that we know when we experience pain (Identification Thesis), they are immune to the Humility problem.

Does this vindicate non-reductionism in philosophy of mind? Not at all. P-manifestations can be taken as fundamental from the perspective of the identity theory of the mind as well. According to that view, P-manifestations are type-identical to physical causal roles, those played by the brain in the relevant circumstances.[24] Given the phenomenal character of P-manifestation, its occurrence marks the occurrence of a specific type of a physical causal relation. Identifying pain with physically realized causal roles, means that the phenomenal component marks, for the subject in the first instance, that *those* specific physical causal roles are occurring, giving a metaphysical depth to the Identification Thesis. As we saw, Lewis' attack on the thesis was based on his Humeanism, according to which pain can have quite different roles in different contexts or worlds. If, vice versa, Kripke's view on the coincidence of appearance and reality is endorsed, and the reasoning presented here is correct, determining the modal fixity of the phenomenal causal roles allows for individuating the property of being in pain across possible worlds.[25]

Moreover, distinguishing phenomenal types in terms of their causal profiles is also a way to distinguish the physical causal profiles that they can be identified with, ironically along the lines suggested by Lewis himself (1972). And the more the causal profile is specified, the more one tends toward the *unique realizer* Lewis mentioned in that very paper. For instance, if the role of scratching all minerals and being scratched by none is a role played by diamond alone, then diamond is the unique realizer of the role in question. The same applies to the variety of pains: the more their roles are specified, the better they are individuated. This identification, by anchoring the causal net of phenomenal dispositions to physical properties, has a further consequence: the modal fixity we established for P-capacities by virtue of the modal fixity assumed for P-manifestation, also applies to the physical side of the identity, that is, to its physical properties. Humility is, in some sense, also blocked for those physical properties with which we can identify the modally fixed phenomenal properties, and again by virtue of very detailed specification I mentioned.[26]

7. Mask, Antidotes and Other Objections

Defending a dispositional view of pain and affirming that dispositions can be stimulated or triggered seems like an endorsement of the conditional interpretation of dispositions, according to which something has disposition D if, once stimulated, it manifests some further state or property. This conditional analysis has been challenged in many ways. Do phenomenal properties fare any better with respect to these objections? Before replying, I wish to notice that insisting on stimulation is not necessary on my side: manifestations could be the result of interactions with mutual partners as well, so there would be no need to consider a disposition to be purely passive (see Hill 2005). But some answers can be provided nevertheless. The first objection to the conditional analysis was the case of finks (Martin 1994): these are supposed to block the manifestation of a disposition by intervening between stimulus and manifestation. Countering this objection with Lewis (1997), the P-capacity has to be considered to be present in the interval between stimulus and manifestation, and if this is the case the objection is disarmed. Mimicks, another potential objection, can be dismissed from the very beginning: mimicks do not have the proper stimulation nor the proper manifestation. If, vice versa, one feels pain, one is *necessarily* in pain, hence a pain feeler, even if feeling pain is not all there is to being in pain.[27]

However, a dispositional interpretation of pain is still under siege from masks (Johnston 1992) and antidotes (Bird 1998). The fragility of glass is masked by wrapping it in bubble wrap: the glass preserves its fragility but doesn't manifest it even if properly stimulated. It seems to me that the case of sensations parts company from ordinary objects: a bubble glove doesn't mask your P-capacity to feel pain once the hammer hits your finger, it rather *contributes* along with the hammer to giving you a (different) sensation. The difference from the example of the glass lies in the fact that we continue to have sensations. These are different, but nevertheless present, so that an analogy with glass is broken. The fact is that the glove (like the bubble wrap) should be included in the stimulating conditions, which are changed as a result. And given this change, the manifestation changes accordingly. So, if the assumption is that specific stimulating events must cause specific sensations, changing the stimuli will change the manifestation as well, as suggested by Lewis (1997), and somehow

by Manley and Wasserman (2008), in the "strategy of getting specific" later refined in Choi's (2011b) double contextual analysis.[28] So, masks can also be dismissed. Antidotes are the most worrisome case.

You are under anesthesia and don't feel pain when in surgery: under the assumption that your P-capacity is still there and the stimulus is the proper one, the conditional fails. But the issue is this: is your P-capacity still there? Let me argue that antidotes work by blocking the physiological functioning of our P-capacity.

Consider general anesthesia first. In this case, all physiological activity related to the occurring of conscious activity is removed. P-capacity is the physiological precondition for conscious activity related to pain. Therefore, if the latter is removed so is the former: there cannot be any conscious manifestation without the physical capacity necessary for it. In such a case, then, the analysis is violated because P-capacity is not there, so the conditional is vacuously true. However, it is reported that during knee and other kinds of surgery, people manifest distress, even if they do not remember it because specific drugs in the cocktail have the effect of blocking or removing the capacity to remember. What should we say of that distress? This case is interesting because if we accept that distress is evidence of the individual being conscious, then s/he feels pain as was supposed to happen. However, a second disposition occurs and it is finked: anesthesia works by tampering with our capacity to remember rather than our capacity to feel, arriving at the correct prediction.[29]

Now consider local anesthesia: by saturating the receptors for pain, nociceptive signals coming from a specific location or area are prevented from reaching the brain. It seems that in this case as well P-capacity is somehow modified. However, one may wonder why such a partial modification is enough to block the objection. Here, we should look at the specific phenomenal content. Every phenomenal pain has some phenomenal location: sensory pain is identified as present in a spot, area or volume. Usually, though, the location of pain is considered representational: pain is centrally elaborated while represented as being in a specific bodily location (Bain 2007; Tye 1997). However, many agree that the source of pain, its cause, is local. Pain, as a manifestation, is caused by a nocive local condition, and determines a phenomenal state whose content

represents the causing location, but is not *in* the causing location. Since the nocive local condition is the cause of the phenomenal state, if that cause is removed or the causal transmission chain is blocked, thanks to local anesthesia, the effect, the manifestation, is removed as well. Therefore, in the case of local anesthesia as well, the analysis is violated and the conditional holds. Therefore, the antidote case misfires in the case of conscious activity.

Summing up, the consequence of considering phenomenal properties to be dispositional properties is twofold: on the one hand, dispositionalism would also cover this important category of properties providing a new argument for the pandispositionalist view, according to which every property is a disposition; on the other hand, the prospects for a physicalist, hence monist, view of mental properties are improved. Regarding the second point, considering phenomenal properties to be dispositions allows identifying these properties with their roles without assuming a ruthless reduction. At the same time, this strategy helps prevent the Humility problem, because we can support the Identification thesis both in purely phenomenal and in phenomenal-plus-physical terms. Chalmers' view, which combined categoricalism and non-reductionism in the philosophy of mind, has been taken as the received view for phenomenal properties for many decades. I have argued that a dispositional interpretation of phenomenal properties is possible, one that is also compatible with the adoption of identity theory in the philosophy of mind. A dispositional interpretation of phenomenal properties is thus available. To be sure, the idea of unifying phenomenal and physical views doesn't encounter many adherents, but if pandispositionalism is wanted, this consequence should be considered.

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Compliance with Ethical Standards

Conflict of interest Simone Gozzano, the one and only author, declares that he has no conflict of interest.

Ethical Approval This article does not contain any studies with human participants or animals performed by any of the authors.

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[1]For instance, those that differentiate thoughts about water when you confront yourself with water or twin-water (Putnam 1975).

[2]Even if Chalmers (1996) considers that phenomenal properties are covered by psychophysical laws, these laws are not essential to what phenomenal properties are. Clearly, categoricalists mention dispositions. As Barbara Vetter observes: “Categoricalists hold that the world, at bottom, does not contain dispositional properties. All the sparse, the perfectly natural properties are categorical. Of course, we use dispositional idioms, and we say true things in using them.” (Vetter 2013, p. 344).

[3]See Malzkorn (2001) for a history of these attempts.

[4]Hugh Mellor (1974) has provided a dispositional analysis of *triangularity*, while Prior (1982) has defended the categoricity of this and other properties. Some philosophers reject the distinction altogether (Martin 1994; Heil 2003; Mumford 1998). Others have reformulated the distinction (Choi 2011a, b; Handfield 2008) by using other criteria and by considering dispositional and categorical properties to be mutually exclusive (Prior et al. 1982). See Choi

and Fara (2012) and Cross (2011) for reviews.

[5]Unless one abandons the idea that the distinction is exclusive. For instance, Heil (2003) and Martin (1997) think that properties can be both dispositional and categorical. I will come to this problem later.

[6]Chalmers (1996, p. 94) characterizes our zombie-counterparts as molecule-by-molecule identical. Kirk (2005) enlists a variety of definitions.

[7]Basically, I'm endorsing the "Eleatic principle", the reality of a property lies in the dispositions it bestows. See Shoemaker (1980).

[8]A referee, whom I thank, observed that this is not the only option: some scholars, such as Pereboom (2011), have stressed that neither dispositional properties, nor mental properties, need be functional properties: they can instead be compositional properties, where their constitutive entities can be different, given the multiple realizability view. As I read him, Pereboom thinks that taking pain to be functional doesn't cut much ice between reductive and non-reductive physicalism. It is an important point. However, unless one declares that a compositional property *cannot* receive a functional interpretation, taking mental properties to be compositional doesn't sidestep the issue.

[9]It is fair to say that not all authors agree on this reading of Jackson's argument: David Chalmers and Galen Strawson, for instance, draw a different lesson from it.

[10]The idea is that we cannot err on our being in pain; empirical research is a further step in our privileged acquaintance with pain. The privilege is epistemic in that if we do not know which sensations we have, we are in no position to say anything about our *phenomenal* life at all, pretty much in analogy with Evans point on immunity to error (Evans 1982, p. 221). See Williamson (2000) for a critical perspective.

[11]For a proto-intentional perspective on phenomenal properties see Pereboom (2011).

[12]One could argue that the categoricalist may just accept that phenomenal properties are categorical and their bases are physical properties of the brain. This move, however, would run against the idea that the zombie world is physically indiscernible from the actual world.

[13]A thesis that is also crucial for Schaffer, who has argued that a common source of the skepticism ensuing from Humility is captured by the following argument: (i) If there are worlds that differ solely over which property confers which power, then we do not know which properties exist; (ii) We do know which properties exist; (iii) Therefore: there aren't worlds that differ solely over which property confers which power" (2005, p. 16, steps renumbered). So, premise (ii) is the general version of the Identification Thesis.

[14]I thank a referee for having stressed this point.

[15]Dretske (2005) stresses that an animal can be aware of being in pain but not aware that what it is aware of is pain, so not aware of the concept of pain. This is an example of the further

epistemological steps I was mentioning.

[16]*Inter alia*, this shows that the identification of categorical and dispositional properties, suggested by Heil and Molnar, is not acceptable to the phenomenal categoricalist, who would be at risk of giving up the crucial difference between phenomenal and psychological properties.

[17]I am very much indebted to an anonymous referee for having pressed me on this point.

[18]The variety of pain experiences is very articulated, ranging from hyperalgesia to asymbolia for pain. See some of the papers in Aydede (2005).

[19]Molnar (2003) too considers the intentional character of dispositions to be crucial. I can just note that I'm not begging the question against the categoricalist's view that properties are independent of causal roles and laws. The intentionality here revealed is an internal relation of sensations. However, it runs against Armstrong's assertion: "Properties are self-contained things, keeping themselves to themselves, not pointing beyond themselves to further effects brought about in virtue of such properties" (Armstrong 1997, p. 80).

[20]For instance, once the categorical reading of Chalmers is abandoned, one may take them to be types of physical states. See Hill (2005, 2009) for the positing of such a state in the context of a physicalistic understanding of pain, or multiply realizable tokens (see Bird 2018).

[21]In feeling pain one can wince, cry, or resist stoically, so physical behavior may differ. However, if pain is pain, psychological aversion ensues. Masochistic attitudes are positive attitudes toward aversive sensations.

[22]From this perspective, the qualitative nature of pain is one and the same as its dispositional nature, as Heil (2003) maintained. The two interpretations mentioned are what Bird (2018) would call the teleological function of pain.

[23]Bird, however, thinks that talk of capacities should be replaced by a teleological view of mental dispositions. It is not possible to explore this further issue here, but see note 23.

[24]For a recent defense of type-identity in the philosophy of mind, see the papers in Gozzano and Hill (2012), and for my view see Gozzano (2012).

[25]Notice, however, that the above dispositional construal of phenomenal properties doesn't rely on having a type identity theory of mental to physical states. Defending a multiple realizability view is compatible with a dispositionalist account, provided that the causal relations that hold stable across possible worlds are those that realize P-capacities, P-manifestations and avoidance attitudes.

[26]A vexing problem for dispositionalism is that it may engender regresses. Recently, Yates (2017) argued that the two regresses that threaten dispositionalism, concerning causation and identity, can be blocked by appealing to a functional individuation of properties. Specifically, Yates thinks that the identity regress can be blocked by getting non-mental properties

(input/output relations with the external world) into the causal picture, thus determining which fundamental properties are at stake. I think that the strategy I pursue regarding phenomenal properties can do the same job if the identity of the phenomenal and the physical is admitted.

[27]Mimicking the behavioral reaction to pain is not mimicking the feeling of pain, of course.

[28]See Vetter (2015) for some difficulties related to this strategy.

[29]The case, raised by a referee for this journal, whom I thank, is interesting and would deserve a better discussion, but I cannot face it in details here.