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MAKING SENSE OF THE PUZZLE OF MATTER: Idealistic Challenge and Quasi-Kantian Response

In the contemporary philosophy of mind, most debates revolve around the problem of the place of mind in the otherwise fully physical (material) world. The existence and genuine physicality (materiality) of the latter are usually taken for granted, as unproblematic. However, this assumption overlooks the Berkleyan problem of the possibility (conceivability) of mind-independent physical reality, which still resides with us. Recently, such reputed philosophers of mind as David Chalmers [Chalmers, 2003; Chalmers, 2005], Howard Robinson [Robinson 1982: pp. 108-123], and John Foster [Foster 1982; Foster 1993; Foster 2008] rehearsed and developed arguments for idealism (Robinson, Foster) or, at least, for taking it seriously (Chalmers). On the other hand, such philosophers as David Lewis [Lewis, 2009] and Rae Langton [Langton, 2004] advanced and defended the solution of this problem that involves the unknowability of the fundamental intrinsic properties of matter, quiddities, as sort of Kantian things in themselves. The graveness of the Berkleyan problem for physical realism and the tenability of its quasi-Kantian solution still is a matter of debate.

The aim of this article is to survey the Berkleyan problem and its 20-th century rehearsals (from Russell to Chalmers and Robinson) and to outline what seems to be the most plausible way for a physical realist to meet the challenge.

In our everyday thinking, we are used to take the physical reality that surrounds us as independent of our minds in its existence and properties, and this view seems

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self-evident and non-problematical. The world is not a product of my imagination, the phenomena of my mind. It existed long before me and you. Science tells us that the physical world existed several billion years before there was any living being that could have a mind, and that the period during which life exists, and even more so the period during which minds exist, is a tiny part of the period of the existence of the universe. Material things exist and have the properties they have independently of whether I, or anyone, perceive(s) it or not. However, such a common and, one would think, strongly supported by science (at least, by some important theories that are an integral part of contemporary scientific knowledge) view turns out problematical in the light of several philosophical considerations, beginning with those advanced by George Berkeley in 18th century. To set forth and evaluate these considerations, it is useful to make the following distinction of the kinds of properties that different entities, physical and mental, possess or *perhaps* possess.

1. Spatial, dispositional and fundamental intrinsic properties

To begin with, there are properties that characterize spatial locations of physical objects (size, form, location relative to other physical objects, relative locations of the composing parts (spatial structure)) and their temporal dynamics — velocity, acceleration, patterns of movements. Let us designate properties of this kind as *spatial properties*. Spatial properties are of crucial importance for our discussion, because arguably, all our concepts of other physical properties are in a sense derived from our concepts of spatial properties. The idea is at least as old as Descartes', who famously claimed that the definitive property of all non-mental things in the world is extension. It may seem that our understanding of the relevant matters has changed very much since Descartes; but in a sense, the core is retained. To see this, consider the explanation by Thomas Nagel (who takes his cue from Herbert Feigl [Feigl, 1958]) of what makes a newly discovered property physical:

«Since the class of known physical properties is constantly expanding, the physical cannot be defined in terms of the concepts of contemporary physics, but must be more general. New properties are counted as physical if they are discovered by *explanatory inference* from those already in the class. This repeated process starts from a base of familiar, observable spatio-temporal phenomena ...» [Nagel, 1979: p. 183]

So, we have the claim that physical properties are those that are discovered by *explanatory inference* in the repeated process that *starts from a base of familiar, observable spatio-temporal phenomena*. What does this mean? To explain, let us notice that for all physical properties above the «base of familiar, observable spatio-temporal phenomena», our concepts of these properties are *dispositional*. These concepts are introduced to represent *dispositions, propensities, or powers* to produce some law-abiding physical effects — regularities in how physical objects influence other objects and are affected by them.

For example, the concept of inertial mass was introduced in the context of two Newton's laws and represents the following regularity in relations between the accelerations of interacting bodies: for any two bodies X and Y, whenever they interact, they acquire accelerations in opposite directions with magnitudes such that the ratio \bar{a}_x/\bar{a}_y is constant; if we convene to consider one of such bodies S as the standard (unit) of mass, the mass of any other body B is the ratio \bar{a}_s/\bar{a}_b of accelerations that S and B would have whenever they interact. Other physical properties are introduced in principally the same way, which may involve, besides spatial properties, those dispositional physical properties that were already introduced.

The terminal effects that anchor the whole structure of physical dispositions are observable changes in spatial properties of physical objects. By this, I mean that physical dispositions are propensities to influence either spatial properties or other (lower-order) physical dispositions: the hierarchy builds up starting from dispositions to influence directly spatial properties, first-order dispositions, and proceeding to higher-order dispositions, that is dispositions to influence lower-order dispositions. To emphasize this definitive role of spatial properties for physical dispositions, and to distinguish such dispositions from another kind of dispositions (to be discussed below), let us designate such dispositions, or bundles of dispositions that constantly go together, as *spatially-dispositional properties*.

Can physical objects have some other kinds of effects that *do not terminate on spatial properties*? It seems that they do have such effects — our subjective experiences. Physical objects affect our bodies, and evoke physical processes in our bodies (in particular, brains) that result in our subjective experiences and other mental states. Let us designate the propensities to produce mental effects, or to affect lower-level propensities directed to mental effects as *mental dispositions*. And let us use the term «mentally-dispositional properties» to designate either single mental dispositions or bundles of such dispositions that constantly go together.

So, we have two kinds of dispositional properties. (At this stage, it is expedient to leave it open whether one of these kinds is reducible to another — the issue between materialism, idealism and dualism.) It seems that there are no other dispositional candidates, except perhaps *mixed dispositional properties* — bundles that combine physical and mental dispositions. For the convenience of the following discussion, I will omit this category — physical and mental aspects of *mixed dispositional properties* can (and will) be dealt with as distinct *spatially-dispositional* and *mentally-dispositional properties*.

Are there other kinds of properties, besides spatial and dispositional? There are candidates called *intrinsic properties*, or *quiddities*. These, like dispositional properties, can be divided into two subkinds — mental and nonmental. *Intrinsic mental properties* (also called *qualia*) are phenomenal properties, the qualitative character of subjective experiences as such — what it is like for a subject to have this mental state (for example, visual perception of red color, or sensation of pain, or emotional uplifting) as distinct from other possible mental states¹. *Non-mental intrinsic*

¹ See [Nagel, 1974] for the classical discussion of what-it-is-likeness.

properties are such intrinsic properties that are perhaps possessed by physical objects, if they are not (as they may be, if panpsychism is true) properties of subjective experiences.

To understand better what is involved in the notion of non-mental intrinsic properties, let us think of the intuitive naive notion of colors. Intuitively, we are prone to take color as an intrinsic property of a thing or of (an area of) a surface. For example, a yellow filled circle drawn on a paper is perceived as a continuous area of a plane (a two-dimensional spatial area), as though pervaded by the yellow color, each point inside the circle having the property of yellowness. However, from philosophical reasonings (John Locke on secondary properties) and science, we know that this idea of colors is in fact mistaken, and that what we perceive as color properties is fully accountable in terms of spatially-dispositional (propensities to reflect light waves of certain frequencies) and mentally-dispositional (powers of the corresponding waves, on reaching one's eyes, with the mediation of neurophysiological processes to evoke in one's mind certain sensations) properties. Moreover, we do not know any *genuinely intrinsic* property of physical objects, and the considerations that we will discuss explain why it is so and why such properties, if they exist and are not mental, should be in principle incognizable and, in a sense, inconceivable. (It is not only that we cannot know what they are like in fact, but that we cannot even imagine what they *can be* like.)

Having drawn these distinctions, let us proceed to discuss the considerations that seem to undermine the commonsense realism about objective mind-independent physical reality (physical realism).

2. Challenges to physical realism

2.1. Berkeley's immaterialism

George Berkeley is famous for his denial — that seems to defy common sense — of the existence of matter as reality outside the mind [Berkeley, 2009a; Berkeley, 2009b]. Berkeley had some weighty reasons for this. It seems obvious that all that we know, or can know, about material things around us, we get to know, or can know, only through our sensations and perceptions (visual, tactual, etc.). We form our ideas of material objects out of visual images, tactual and other sensations that emerge in our minds. This being so, what sense does it make to suppose that material objects exist as something *distinct* from those visual images, tactual and other sensations out of which we form their ideas? Why not think, instead, that all there is are just visual images, tactile and other sensations, and that bundles of such mental phenomena are the only real things that are referred to by such terms as «table», «tree», «stone», «human body», etc.?

There are grave problems with this supposition; they become obvious if we ask: whose mental phenomena we are talking about? Whose mind they belong to? Would it be reasonable, on my side, to assume that the world exists only in my mind? There are several considerations against such a view (known as solipsism). The most im-

portant of them have to do with the existence of other conscious beings (humans), such that it seems that we can communicate with them, acquire much knowledge from them, and get to agree about how material things are located in space relative to one another and which physical events precede/follow which (or occur simultaneously). If solipsism is true, all this is an illusion; there are no other conscious beings besides myself; it is just me having schizophrenic conversations with myself; all the world, and all human beings with their ideas and creations are products of my imagination, which, despite its being my own imagination, produces this illusory world and illusory other minds without my being aware of this and, like Descartes' deceitful demon, systematically deludes me into taking the world and other minds as reality that is independent of me. There is a hidden part of my mind of which I am unaware — my «unconscious»; it produces and presents to my consciousness images and sensations of the world, talks into my mind's ears with other people's voices; it has composed and played to me Mozart's sonatas and Beethoven's symphonies and Shakespeare's plays, depicted for my mind's eye Raphael's and Picasso's paintings; it devised Newton's and Einstein's theories, etc.

Berkeley did not defy common sense so much as to accept this view. Instead, he admitted that the «material» world exists beyond my, your, and any other human mind; however, he insisted that it exists in some universal Supermind (the mind of God), as its ideas, and has no other existence. From this point of view, it turns out that all of us (human minds) are sort of plugged in to this Supermind and interact with it, taking its ideas (some of which are our physical bodies) for material objects.

It seems that this hypothesis also has obvious and grave drawbacks. Why place the world into the mind of God, if we can do without it? Although Berkeley was a bishop, his philosophical theology does not seem to sit well with the Christian doctrine (according to which the world, although it was created by God, has separate existence, exists as something distinct from God); it is pantheistic, and according to it, everything that occurs in the world, including all most terrible crimes, is an activity of God's imagination. Such a view of God is unsatisfactory for the vast majority of people who believe in Him. Thus, the doctrine of Berkeley looks unattractive from both atheistic and religious points of view. Does it have any advantages (as compared to the alternative view — the commonsense realism according to which the physical reality exists outside any mind) that can be more weighty than these drawbacks? Perhaps it does. To support his theory, Berkeley advanced an interesting argument that is not easy to rebut. If this argument is correct, the commonsense realism is incoherent, and the only conceivable alternative (besides solipsism) seems to be the theory about the Supermind.

The argument is that if we suppose the existence of reality outside the mind, we are in principle incapable to form ideas (concepts) that could correspond to it. Because our ideas (concepts) are formed out of experience, they can cover only those properties and relations that are present in experience. However, all there is in our experience are mental phenomena (sensations, perceptions, etc.). If physical

reality has an entirely different nature than experience, then its properties and relations within it are not merely unknowable for us — we cannot even form any adequate idea of them. We can form an idea only of something more or less similar to that with which we are acquainted in our experience, something of the same sort, but not something entirely unlike anything in our experience.

Similar considerations ground Kant's doctrine, according to which reality outside our minds («thing in itself»), although it exists and is the source of our experiences, is entirely unknowable, whereas «the world» to which our knowledge relates is the world of phenomena that exist in our minds.

2.2. Bertrand Russell on science's silence on the intrinsic nature of physical reality

Bertrand Russell [Russell, 1927] had drawn attention to the following fact: all that physics (and natural sciences generally) tells about physical objects and processes are certain spatial, temporal, and causal relations and dispositions. But physics (natural sciences) tells nothing — and apparently, in principle cannot tell anything — about what is, so to speak, in the knots of this network of relations (except of course, that it is something that is in the knots of these relations). It tells nothing and cannot tell anything about *the intrinsic nature* of that between which these relations hold and which is the carrier of the corresponding dispositions — about the intrinsic nature *of fundamental physical entities* (from which, owing to the spatial relations between them and the dynamics of these relations, all compound physical objects and processes are constituted).

This was also emphasized by many later philosophers. David Armstrong remarked that «the properties of the physical objects that physicists are prepared to allow them, such as mass, electric charge, or momentum, ... show a distressing tendency to dissolve into relations that one object has to another», and physics leaves unanswered the questions: «What, then, are the things that have these relations to each other? Must they not have a non-relational nature if they are to sustain relations?» [Armstrong, 1968: p. 282]. Likewise, David Chalmers writes: «by the character of physical explanation, physical accounts explain *only* structure and function, where the relevant structures are spatiotemporal structures, and the relevant functions are causal roles in the production of a system's behavior» [Chalmers, 2003: pp. 104-5]. (It should be noted that a *system's behavior* is itself nothing but a complex of spatial structure and dynamics.) Howard Robinson makes a similar remark about physical bodies: «we are left with a conception of body which makes it spatial and dispositional only» [Robinson, 2009: p. 113], where the relevant dispositions are spatiotemporal — dispositions to produce and undergo certain law-abiding spatial dynamics. The same applies to other physical entities, such as fields and waves. Generally, «modern science ... sees the basic constituents of the material world as being purely dispositional entities which are characterized solely by reference to their ability to act upon and influence things in their vicinity. ... we are presented with an ontology which is avowedly devoid of quality, containing only quantitatively

discernible forces, fields and energies, all of which are entities existing only as forms of disposition, power and influence» [Robinson, 2009: pp. 109, 113].

Obviously, fundamental physical entities should have an intrinsic nature owing to which they are not merely points or areas in space that do not differ from other points or areas. Howard Robinson points out that this intrinsic nature cannot consist in spatially-dispositional properties (powers), that is, in properties to influence the dynamics of movements (changes of spatial locations with time) of other physical objects and to undergo the corresponding influences on their part, because these other objects should have essentially the same intrinsic nature, and thus, we would have an infinite regress of (spatial) relations and dispositions with respect to something that is nothing but a carrier of relations and dispositions with respect to something that is nothing but a carrier of relations and dispositions with respect to something ..., etc. *ad infinitum* or circularly. (Robinson describes this as «a vicious regress of powers» [Robinson, 2009: p. 119].) Even if the intrinsic nature of *some* physical entities can be purely dispositional, this dispositionality should be a disposition with respect to something non-dispositional, or at least reach such a non-dispositional terminus through several (finite number of) dispositional intermediaries, — it should be «anchored» (even if not grounded) into some non-dispositional, categorical intrinsic properties.

3. Meeting the challenges

I think that although the above considerations highlight serious difficulties in making sense of the concept of matter as a mind-independent reality, they do not prove its invalidity. To take account of Berkleyan and Russellian considerations, there are four options.

3.1. Pure dispositionalism. We can try to bite the bullet — to adopt the idea that physical entities have only spatial and spatially-dispositional properties, that they all are just bearers of spatial relations in the whole of physical reality and dispositions to change these relations with time, so that the whole is formed by relations between its elements, and the elements are defined by relations to other elements of the whole. The whole is some (changing with time) structure of relations, and physical entities are knots of these relations, having no intrinsic non-dispositional properties. All physical entities are defined by relations to each other, and have no their own (non-relational) reality.

To this, Robinson objects that such a notion of physical reality, in which everything is defined by relations to others, is at least empty (because everything is defined by a chain of references that never reaches any end, all remains indefinite) and hardly coherent². This judgment can be supported by the following reasoning.

Imagine an absolutely empty and physically qualityless space. In this space, one can construct, in an infinite number of different ways, spatial structures out of

² Robinson describes this as an attempt «using the magical net of holism ... to fish sense out of a sea of nonsense» [Robinson, 2009: p. 116].

arbitrarily taken points or areas, and imagine changes of these structures with time in any arbitrarily chosen law-abiding way (in accordance with any logically possible laws of nature). For each such a way, one can construct an imaginary physics, with imaginary bodies, fields, waves, etc., which have certain spatial locations/distributions, temporary dynamics, spatial dispositions, etc. In particular, one can choose the imaginary structures and their dynamics in such a way that they are exactly the same with the physical structures and dynamics in our world. Obviously, the real physics of the real world, in which spatial relations and dispositions eventually refer to something (even if it is indefinite) that we call physical bodies, is essentially different from such an imagined physics, in which spatial relations and dispositions refer to arbitrarily taken empty points or areas. That is, a physical body (or an area occupied by a body) should be *intrinsically qualified* to be different from the empty qualityless area that could be in its place. The quality at issue is neither spatial location nor spatial dispositions, because location and dispositions are relations between something having this quality.

A prominent contemporary theorist of the dispositionalistic account of all properties, Anjan Chakravartty, when confronted with the problem of the vicious *epistemological regress ad infinitum* (the problem is supposed to be that «once we have attributed causal properties by appeal to certain effects, properties associated with these effects must invariably be attributed by appeal to further effects» and so on *ad infinitum*, and because this regress has no end, we cannot know what are the relevant effects), proposes the following solution of this problem: «causal chains originating with the properties we attribute are connected, in cases where we justifiably claim knowledge of them, to our sensory modalities», so our knowledge of dispositional properties is ultimately anchored in our sensory modalities, of which we have direct knowledge without appeal to further effects [Chakravartty, 2003: pp. 397-398]. However, when confronted with the analogous problem of metaphysical (ontological) regress, which is the concern of our discussion, he proposes a non-analogous solution (the analogous solution would be the one discussed below under the heading «3.2. Dispositionalism with mental anchoring»): «The identity of a disposition is fixed, not by further, yet higherorder levels of properties, but by the various causal relations of which objects having it are capable» [Chakravartty, 2003: pp. 397-8]. However, this purported solution merely misses the crux of the problem, which is that it leaves us with the network of relations without there being anything (any intrinsic properties that do not dissolve into relations) to impart reality to their relata, — nothing to distinguish real objects that stand in those relations from any arbitrarily picked out spatiotemporal lines or (four-dimensional, with time standing for the fourth dimension) areas in spacetime, as well as nothing to distinguish the real spacetime from an imaginary four-dimensional geometrical space. The relations that constitute the network should have some qualitative non-relational underpinning.

Taking into account these considerations, it is unintelligible how the concept of physical reality as purely spatial and spatially-dispositional, qualityless (in the

sense that fundamental physical entities have no non-dispositional intrinsic properties) can be coherent. So we should seriously consider alternative possibilities, and probably, give preference to one of them.

3.2. Dispositionalism with mental anchoring. We can suppose that the chain of relations and dispositions to something that is defined by relations and dispositions to something that... {etc.} eventually ends at non-dispositional *experiential* states, «what it is like for» a subject. For example, microparticles have the property-capacity to form complex systems-bodies that have the disposition to reflect electromagnetic waves of certain frequencies that have the disposition, on reaching the eye, to cause certain physical processes on the retina that have the disposition to act on the adjacent nerve cells and evoke their excitation, and those cells have the disposition to transfer excitation further on along the chain up to some physical processes in the brain that have the disposition to raise in the mind certain visual images-perceptions. The subjective qualities of such perceptions (what it is like for a subject to have them) are not something dispositional, referring to something other, — they are experiential properties (subjective states) directly familiar to the subject. We know what it is like for us to have a visual perception of red, or to feel a toothache. These familiar experiential properties do not need definition with reference to other things (properties), and such a definition is impossible in principle. They are the ultimate categorical properties to anchor all the rest.

This version has some plausibility due to the fact that eventually, everything that we know about physical reality, is epistemically anchored in our experiences — those sensations and perceptions that physical processes eventually cause in our minds. (Our knowledge of physical reality is always and inevitably mediated by our sensations and perceptions.) Unlike the previous version, here, the structure and «knots» of physical reality qualitatively differ from the qualityless emptiness that could be in their place, because physical entities are defined, eventually, by contributions (which would be none in the case of qualityless emptiness) to non-dispositional properties of mental states.

The view is clearly inconsistent with materialism, because on it, the whole nature of physical reality (matter) consists eventually in its dispositions (powers) to produce (in minds) some subjective mental effects, whereas on the materialistic view, matter is fundamentally non-mental and existed long before minds.

Because the view involves sort of ontological priority of mind over matter, it also contradicts dualism of the usual kind (one that allows for the ontological parity of mind and matter). However, it may cohere with a peculiar idealism-flavored form of dualism. Consider the view that physical reality exists objectively, independently of the mind, and has certain spatial, spatially-dispositional and mentally-dispositional properties. Eventually, all physical properties are ontologically anchored (through mentally-dispositional properties) in subjective experiential properties of mental states, and there are no other non-relational (non-dispositional) properties in the world. On this supposition, although the mind (the mental, in the sense of being capable of having subjective experiences and awareness) has sort of

ontological priority, the distinction between it and physical reality is retained; so the view can be qualified as dualism. In this case, (unlike the materialistic view of pure dispositionalism) there is no vicious infinite regress of relations and dispositions, because besides physical objects with their dispositional and spatial properties, there is something (qualitative states of minds) on which the dispositional regress stops. This view still leaves dispositions of physical objects queerly lacking grounding in any non-dispositional intrinsic properties; however, this ontological groundlessness can be judged as less unpalatable than the absence of ontological «anchoring» because it does not produce infinite dispositional regress.

However, such a peculiar dualistic version is at least very problematic, because it attributes to physical reality properties that are difficult to reconcile: on the one hand, it is supposed that physical reality has mind-independent existence and properties; on the other hand, it is supposed that its existence, its being real, its difference from nothingness (or from an empty qualityless area of space), its intrinsic nature consists in its relations, direct or mediated, (dispositions with respect) to mind. Moreover, if we combine this with contemporary scientific knowledge, according to which physical reality existed several billion years before the emergence of the first mind, then this means that throughout all that period, physical reality had existence of a strange kind, entirely borrowed from the future — the existence of links in the chain of causal relations that in the future (after billions of years) will reach its destination, mental states. In that remote past when no mental states existed, these nonexistent, future mental states in some incomprehensible way imparted physical entities of those times with reality, existence!

3.3. Panpsychism or idealism. We can suppose that fundamental physical entities have their own non-dispositional intrinsic properties, and these properties are of the same kind as the only non-dispositional intrinsic properties we are familiar with — phenomenal properties of our mental states. This means the adoption of the theory of panpsychism: the most fundamental physical entities, such as quarks and electrons, are subjects of mental states, of some subjective experiences; there is something it is like to be a quark or an electron³.

Although the idea that quarks and electrons have subjective experiences seems implausible, it may be that this is merely a consequence of its strangeness and of the impossibility for us to know the truth of the matter. Electrons and quarks are too remote from us in the hierarchy of existence — so much so that we cannot imagine what it is like to be an electron or a quark, and we are intuitively inclined

³ Among other things, there is a difficulty of fitting into the picture such entities as electromagnetic waves: they are not individualized, whereas subjective experiences should be experienced by some subject-individual (mental states should be someone's); perhaps, it is somehow possible to interpret the quanta of energy as individuals. One may suppose that such individuals-subjects are microparticles (such as photons) that correspond to waves; however, in such a case, they should have stable existence rather than lose their individual existence by being somehow transformed into waves and then emerge again when the wave collapses (as quantum mechanics seems to say they do).

to think that there is nothing it is like to be an electron or a quark. Besides, the statistical «behavior» of such microparticles is subordinated to objective mind-independent laws of physics, which are the only means we have to predict this «behavior»; whereas the supposition that quarks and electrons have mental states is of no use in this regard, because we do not have even the slightest idea of these states and how they affect the behavior of microparticles. Therefore, it seems more rational and economical («Occam's razor») to reject this supposition, because it is incapable of explaining any observable phenomena.⁴ However, this holds only if there is nothing in favor of the supposition to outbalance its predictive uselessness. If the supposition is the only conceivable coherent answer to the problem of non-dispositional intrinsic properties of fundamental physical entities (taking into account the problems with the earlier discussed options), then it is reasonable to accept it. Thus, the reasonableness of the adoption of the panpsychistic supposition depends on the existence of a better alternative, and the alternatives we discussed earlier do not seem to be such.

Alternatively (although perhaps as implausibly), we can entertain a Berkeley-kind idealistic or panpsychistic hypothesis that what we take for the physical world is the stream of experiences of the Cosmic Mind, and what physics studies is really the structure and dynamics of relationships between the experiential properties of this Supermind's total mental state. Berkeley identified it with God, but we probably would better not attribute to it the perfections usually attributed to God. Cosmic Mind need not necessarily be very intelligent or benevolent. It should be immensely rich in experiences (and have lots of kinds of experiences we have no idea of), but can be nevertheless of an inferior kind due to the lack of appropriate ordering. As Philipp Goff suggested in his recent book *apropos* the view he calls Cosmopsychism, «[w]e need not think of the universe as a supremely intelligent rational agent», or a highly evolved conscious creature; «[i]t is more plausible that the consciousness of the universe is simply a mess» [Goff, 2017: p. 243].

3.4. Quasi-Kantian quidditism. We can suppose that matter has, besides spatial and spatially-dispositional properties, some non-dispositional and non-relational intrinsic properties (or property), in virtue of which physical bodies, fields, and waves differ from empty qualityless points or areas of space, and which *are not mental*. Let us dub this view *quidditism*, from «quiddities» — the philosophical term often used to mean non-relational intrinsic properties, especially if they are taken to be non-mental. There is a considerable (but perhaps acceptable) price to be paid for taking this view — the unknowability of non-mental quiddities. We have no cognitive access to them. It is impossible to get to know what quiddities are like (except in the entirely non-illuminative sense that an unknowable quiddity is like

⁴ On the other hand, if we give free rein to imagination and speculative thinking, we can suppose that quantum-mechanical indeterminism (unpredictability of the «behavior» of an individual microparticle, and only statistical predictability with respect to a stream of such microparticles) is somehow grounded in mental states of microparticles (an analogue of free will).

some other unknowable quiddity), or even get a tenable idea of what they can be like, intrinsically, «in themselves» (using Kant's term). We cannot know what these properties are like by direct acquaintance, in the way we directly know our own mental states (what it is like to feel pain, or to have a visual perception of red), because physical quiddities are not mental states, not something subjectively experienced. And we cannot know them in the way we know about usual (spatial and spatially-dispositional) physical properties, as certain aspects of, or contributions to, spatial structures and dynamics, because they are nothing of the sort. «In themselves», they are stark incognizable, largely for Kantian reasons.

Howard Robinson discusses this kind of possible answer to the problem of intrinsic properties, and writes that according to it, intrinsic properties are some unknown and in principle incognizable «nameless residue». He is skeptical about the idea:

«This residue would be a very strange type of entity. Berkeley's scoff at substratum that it is nothing but the bare idea of being itself would be appropriate here: it would be nothing other than the idea of bare physical thing.» [Robinson, 2009: p. 121]

But is this Berkeleyan scoff a weighty argument against the view at issue? Admittedly, the idea that the fundamental intrinsic nature of physical entities is unknowable seems strange at first sight, and is likely to make one feel uncomfortable. However, we can get used to it, and it will cease to seem so strange, if we understand that the fundamental intrinsic nature of physical entities, if it is not mental, *has to be incognizable* (cannot be cognizable). It cannot be familiar as mental states because it is not mental: there is nothing it is like (how it is experienced subjectively) to be an electron, and there is nothing it is like for an electron to have a certain mass and electric charge. And it cannot be explained/described in terms of other properties, because fundamental properties in principle cannot be explained in terms of other properties. Something less fundamental can be explained in terms of something more fundamental, but the most fundamental as «thing in itself» cannot. If it is mental, it can be directly familiar to the subject; otherwise, it can only be named. Of course, this does not preclude a *relational description* concerned not with properties as «things in themselves» but with their role in the network of physical relations that epistemically terminate (are anchored) in our experiences.

To judge whether such a view is acceptable and reasonable, we need to compare it with its alternatives. Obviously, the assumption that the intrinsic nature of fundamental physical entities is mental (either in the panpsychistic version, according to which electrons, quarks, photons, etc. have subjective experiences, or in the version of Berkeleyan idealism, according to which the physical world is nothing but mental states of the Universal Mind to which our minds are somehow plugged in) is no less unusual and strange. It also seems that the considerations we have discussed above provide weighty reasons to decline the idea that physical reality has no properties besides spatial and spatially-dispositional ones

(no intrinsic nature). On the balance, the notion of matter as mind-independent objective reality that has an incognizable intrinsic nature may be the best among the available options.

Note that although from this point of view, the Kantian agnosticism with respect to the fundamental intrinsic properties of matter as «things in themselves» is inevitable, we do not need to extend it to others — spatiotemporal and dispositional — aspects of physical reality. Despite Kant, we can (and have weighty reasons to) think that space, time, causality, etc. are not forms of sensibility and understanding that inhere in our minds but fundamental types of relations in reality itself (as «thing in itself»). Of course, our minds should have the corresponding capacities for grasping such relations (Kant's «forms»); however, for us to grasp successfully something by these means, there should be something that corresponds to them (is graspable by their means) in external reality itself (as «thing in itself»). From this point of view, physical reality is knowable in the sense that we can know about structures and dynamics of differences and relations within it; however, this leaves unknown and unknowable the fundamental «intrinsic nature» of that between which these differences and relations hold. (The knowability of structure and dynamics is due to the correspondence between, on the one hand, structures of differences and relations in physical reality, and on the other hand, structures of differences and relations in our experience and our notions that are formed and developed in the process of our interaction with this reality.)

This sort of realism with respect to physical reality with an element of Kantian agnosticism makes it possible to answer Berkeley's argument: we have the concept of physical reality as something outside our minds, having mind-independent existence, and that is the source of our sensual-perceptual experience. Although the fundamental nature (intrinsic properties) of this «something» is unknown and unknowable, we can find out a lot about structures of differences and relations, and temporal changes in physical reality, by inventing concepts and theories that provide best explanations for all the differences and relations and temporal changes in our experiences that are evoked by this reality.

On the delineated quasi-Kantian view, although fundamental intrinsic properties (quiddities) of physical entities are not dispositional «in themselves», they do in fact implement dispositional or causal roles *in virtue of the laws of nature*. Dispositional physical properties should be «anchored» in quiddities, in the sense that (for there to be no vicious regress of dispositions *ad infinitum*) they should eventually be dispositions with respect to physical objects *as bearers of quiddities* (for example, the disposition to attract or repel physical objects that have a quiddity A). Moreover, on this view, it is most plausible that dispositional properties are not only *anchored* in quiddities at the destination end, but are also *grounded* on them *constitutively* at the point of origination: dispositional properties are not ontologically fundamental (categorical) properties of physical entities but ontologically derived of quiddities in conjunction with causal laws of nature (they are constituted by such a conjunction).

If so, then pace Robinson, quiddities need not be «nameless residue» but can be identified and named according to the causal roles they implement (the dispositions they anchor, and probably, constitutively ground in the context of the actual laws of nature). Moreover, the fundamental physical laws should be such that — in the complete physics, or from God's point of view — they are formulated, at least partially (if quiddities *only anchor* dispositional properties) but most likely entirely (if quiddities and laws of nature *constitute* dispositional properties), in terms of quiddities and spatiotemporal relations. Therefore, the laws known to contemporary physics are not fundamental (are derived), because they are formulated in terms of such cumulative dispositional properties as mass, electric charge, etc.

It seems easy to imagine how one could proceed to explain reductively such dispositional properties as mass and electric charge in terms of quiddities in the context of physical knowledge of the 19th century. We could attribute to all physical bodies some intrinsic property — let us dub it «materiality» — that anchors and constitutively grounds dispositional properties of mass and impenetrability. We could think of elementary microparticles as microscopic balls, and suppose that their mass is determined, in the literal sense, by the quantity of matter of these balls that is proportional to their volumes. This would make mass a cumulative magnitude. The corresponding fundamental laws of nature could be formulated in terms of the quantity of matter of objects that have the quiddity of materiality. The elementary microparticles that are bearers of elementary electric (negative or positive) charge, such as electrons and protons, could be attributed with further intrinsic properties — let us dub them «electricity» (for negative electric charge) and «antielectricity» (for positive electric charge). Accordingly, Coulomb's law (the law of the attraction/repulsion between electrically charged bodies) could be formulated in terms of materiality, electricity and antielectricity. Unfortunately, such a simple reductive explanation is impossible in the context of contemporary physical knowledge, in which perspective the elementary microparticles have no size (in some physical contexts they are regarded as geometrical points, and in others — as waves), and there are microparticles (quarks) that have charge that equals $1/3$ or $2/3$ of the elementary electric charge (the charge of an electron or a proton); however, these microparticles are never found in isolation but are always joined in groups of three, so that the charge of a triplet always equals the elementary charge or zero.

Generally, in view of huge difficulties of adequate understanding of contemporary physical theories and of forming, on this foundation, an integrated, internally coherent physical picture of the world (especially in the light of the paradoxes of quantum mechanics), we have reasons to be somewhat skeptical about the prospects of finding a way to formulate fundamental physical laws in terms of quiddities and reduce dispositional properties to this foundation. However, perhaps this task is not unfeasible after all. Of course, the chances for success very much depend on the future developments in physics — on whether there will be a revolutionary

breakthrough that will make the constitution of the physical world much more comprehensible than it is now.

Summary

1. If there are ontologically fundamental non-dispositional intrinsic properties (quiddities), their possible relations with dispositional properties may be subsumed under two concepts — of anchoring and of constitutive grounding. An (intrinsic or dispositional) property X anchors a dispositional property Y, if Y is a property to affect in a certain way objects that have X. An (intrinsic or dispositional) property X constitutively grounds a dispositional property Y, if (given the actual laws of nature) objects have Y in virtue of having X (Y logically supervenes on X and the laws of nature).

2. The idea that dispositions are *never* anchored in non-dispositional intrinsic properties but are always anchored in other dispositions and spatiotemporal relations engenders an infinite regress of dispositions and relations without there being anything to stand in (with no qualitative underpinning for) these relations. To avoid this, we should suppose that dispositional properties are eventually (directly or with mediation of other dispositional properties) anchored in non-dispositional intrinsic properties (quiddities).

3. The obvious candidates for the role of the intrinsic properties that eventually anchor dispositional properties are mental states or their qualitative aspects (what it is like for a subject to be in that state).

4. If we are to avoid idealism and panpsychism, we have to suppose that besides being eventually anchored in subjective (phenomenal) properties of mental states, physical dispositions are anchored and constitutively grounded in non-mental (physical) quiddities, which are incognizable in the sense that there is no way to know what they are like, intrinsically, as «things in themselves».

5. On this view, the most fundamental account of physical reality should be in terms of quiddities, spatiotemporal relations, and the laws of nature. The development of such an account is a difficult but probably not unfeasible task.

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MAKING SENSE OF THE PUZZLE OF MATTER: the Idealist Challenge and the Quasi-Kantian Response

The article deals with the Berkleyan problem of the conceivability of mind-independent physical reality (matter) and the Russellian problem of the intrinsic properties of matter, recently revitalized by such philosophers of mind as David Chalmers, John Foster, and Howard Robinson. Alternative approaches to this problem — pure dispositionalism, dispositionalism with mental anchoring, Berkleyan idealism, panpsychism, quasi-Kantian quidditism — are outlined and discussed. An argument is made for the tenability and preferability of the quidditist view, which holds that besides spatial and dispositional properties, fundamental physical entities have non-mental non-spatial non-dispositional intrinsic properties (quiddities), in which spatial and dispositional properties are ontologically anchored and grounded in the context of the actual laws of nature, and which are unknowable in the sense of the Kantian thing-in-itself's unknowability.

Keywords: matter, physical, mental, spatial, disposition, intrinsic property, quiddity

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