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Abstract

Modern science is not linguistically original in hypothesizing the existence of *dark* matter. For Plotinus, the matter that underlies all perceptible objects, is essentially obscure and describable only in the negative terms of what it lacks by way of inherent properties. In formulating this theory of absolute matter, Plotinus took himself to be interpreting both Plato and Aristotle, with the result that his own position emerges as a highly original and equivocal synthesis of this tradition. Plotinus did not claim that matter is nothing, but the puzzling status he attributes to it can be aptly compared to Berkeley's doctrine that material substance is a self-contradictory notion.

1.

Matter, the most generic term for what physicists study, has become puzzlingly elusive in scientific parlance today. Everything in the cosmos consists of matter, but what is that? Some matter, we hear, is 'ordinary', consisting of atoms, but most of it is 'dark' and is indescribable in the standard model of particle physics. Together with the so-called 'dark energy' permeating space, dark matter accounts for 95% of the world's mass-energy content. We can infer its presence from the behavior of visible matter, but dark matter as such (hence its name) is of unknown composition.¹

Plotinus, the latest ancient Greek philosopher of paramount genius, would have sympathized with the modern physicists' difficulties in describing and defining matter. He even anticipated them in calling *hyle*, his own term for matter, 'dark' (*skoteinos*).² Plotinus acknowledged the properties of perceptible matter, taking their presence to be straightforwardly evident from our experience of ordinary objects like trees, stones, and animals – bodily items, spatially extended, and endowed with qualities that impinge on our senses. If all that we mean by matter is the visible and tangible stuff of which ordinary

¹ I take this information from the Wikipedia article on 'dark matter', which is based on references dating to the year 2013.

 $^{^{2}}$ Ennead 2.4.10.

objects consist – the wood of the bed, the bronze of the spear, the flesh and bones of the animal – there is no linguistic or conceptual problem for Plotinus. But what are we to say or think, according to him, when we extend the scope of matter beyond ordinary objects?

Is there a further matter of which perceptible matter, in all its variety, is ultimately composed, a more or a most primitive feature of the world's physical make-up? The favourite ancient answer to this question had been affirmative – to wit, a set of four elements, comprising earth, air, fire, and water. Earth, air, fire and water were generally understood to be qualitative terms, each of them referring not to a single, homogeneous stuff – water in the sense of H_20 for instance – but to the following set of primary qualities or combinations thereof: hot, cold, moist, and dry, all of which admit of change and degree. Qualities of what, we may ask, to continue the analysis? The classic answer – the answer of the Aristotelian schoolhad been 'prime matter'.³

Plotinus's problem, and its nominal affinity to the dark matter of modern physics, can now be stated. In order to serve as the physical foundation of everything, absolute matter cannot be identified with definite or determinate things, such as the four elements. For in that case it could not serve as their foundation too. Matter as such or matter *simpliciter*, to use Aristotelian language, must always be potential and analogical rather than actual, drawing its descriptive identity from the composite things of which it is the matter – for instance the bronze of the spear, the wood of the bed, etc. Is there, then, any such entity as prime matter if that expression signifies a completely indefinite and indeterminate foundation for things? How can we know that such matter is in any sense real and not a mere figment or convenience of our conceptual scheme? I want to show how and why Plotinus grapples with these deep issues.

He is not willing to say outright that matter is nothing. Matter is, in his view, a precondition for the existence of bodies, three-dimensionally extended and perceptible objects; but taken by itself, matter,

³ For the details and interpretative controversies, see M.L. Gill, *Aristotle on Substance* (Princeton, 1989).

⁴ Aristotle had described matter *per se*, which he also calls the ultimate substratum, as 'neither a particular thing nor of a particular quantity nor spoken of in any of the other ways by which a being is determined' (*Metaph*. 7.3, 1029a20). Similarly, the Aristotelian commentator, Alexander: 'Absolute matter is a shapeless and amorphous nature, with no delineation according to its own account', *Comm. in De an.* p. 3, 27ff. Bruns. Plotinus frequently echoes these statements and adapts them to his own metaphysical scheme.

according to Plotinus, is not bodily or physical stuff or anything with determinate quality or quantity. Taken by itself, matter is completely imperceptible and amorphous. We know it only by a kind of inference from phenomena. Try, as we may, to imagine matter independently of form, we find ourselves completely in the dark, trying to picture the least accessible of the world's contents. And yet, however hard it is to specify, matter is there and is necessary. So much by way of introduction to the issues this paper will raise.

2.

I have chosen to discuss Plotinus because, at this late stage of my career, I find him one of the most challenging (and certainly the most difficult) of all the Greek philosophers (to whom I was first introduced in the years 1958–1960, as a Classics student at University College London, a few steps away from the home of the Royal Institute of Philosophy in Gordon Square). Plotinus, working on his grand metaphysical scheme in the first decades of the third century of our era, resists dividing the world dualistically into thought and extension, or animate and inanimate, or body and spirit. These binary categories are inapt, he postulates, because every existent thing has its primary source in everlasting and transcendent Unity, which he also calls God or Father or The Good. For everything that exists there is a corresponding idea, derived from Unity; or rather, existence (meaning determinate, stable reality), depends on what can be thought. Here Plotinus echoes Parmenides, one of his most hallowed predecessors, whom he takes (correctly, in my opinion) to identify being and thinking. Can ultimate matter be thought? If it cannot, it must exist only in some equivocal sense. Ultimate matter, as envisioned by Plotinus, is equivocal indeed, but it is not an incoherent notion. Its obscurity is essential to the gueer role it plays in his metaphysical scheme.

I will now give a brief genealogy of the notions of matter that Plotinus inherited from earlier Greek philosophers.⁵ I will then

⁵ My procedure is deliberately short on a vast range of exegetical questions, which typically predominate in treatments of Plotinus. As the interpreter of Plato that he took himself to be, Plotinus presupposed his readers' familiarity with the entire previous traditions of Greek philosophy. I will highlight only a selection of this background, to the extent that it is necessary for following his main argument in *Ennead* II.4. The essential historical details are excellently treated by P. Kalligas in vol. 1 of his commentary,

work through a selection of his statements, taking them mainly from his short essay *On Matter*. This procedure will enable me to ask in more detail, 'What is the matter with matter?' from his stance. In conclusion, I will ask whether the dark matter of modern physics and the darkness Plotinus attributes to ultimate matter have anything more than a name in common.

3.

Plotinus begins his essay with the expression 'so-called matter'. This evasive-sounding phrase is appropriate because his Greek word *hyle*, conventionally translated by 'matter', starts its linguistic life meaning wood or timber; hence 'material' is often a better translation. Our English word 'matter' is derived from Latin *materia*. In Latin usage *materia*, like Greek *hyle*, primarily denotes wood or timber, deriving that name from the word *mater* in the sense of *mother* earth or parent.

From the outset, then, *hyle* is a metaphorical term standing generically for what things are made of (for instance wood) and then extended to signify the ultimate foundation of physical things. The earliest Greek cosmologists did not draw on the term, but they operated with comparable metaphors. Empedocles called earth, air, fire and water, which are his four primary beings, 'roots'. Soon this quartet was given the name 'elements' (*stoicheia*), a term which is also a metaphor for the world's basic physical components, taken from the Greek word for the letters of the alphabet. 'Seeds' (*semata*) or 'beginnings' (*archai*) were other metaphors that early cosmologists drew upon, to try to capture a notion like our idea of basic matter in ordinary speech. The point to emphasize here is that matter, signifying the world's physical foundations, was and always has been a metaphor-a theoretical notion lacking any fixed empirical reference in itself. Hence we are able to keep using the term even when our

The Enneads of Plotinus, trans. by E. Fowden and N. Pilavachi (Princeton and Oxford, 2014).

⁶ Ennead 2.4. The title ascribed to the work by Porphyry, Plotinus's editor, is On the Two Kinds of Matter. I will be concerned here only with the kind of matter that Plotinus posits for the physical world as distinct from the non-physical matter that he calls 'intelligible'. The excerpts that I cite from On Matter are in my own translation. I am presently preparing a translation and commentary on the whole work for the series The Enneads of Plotinus, eds. J. Dillon and A. Smith (Parmenides Publishing).

scientific models have completely changed. You may care to reflect on the checkered history of modern attempts to give a final definite description to matter – the periodic table of elements; protons, neutrons, and electrons; quarks; strings etc.

Plotinus was familiar with the four Empedoclean elements and also with the atoms of Democritus and Epicurus. From our modern perspective these theories, especially Epicurean atomism, are among the most important antecedents of early European science with its understanding of matter as the ultimate physical make-up of everything. That is because elements and atoms were theoretical notions that envisioned the world's foundations in discrete corpuscular, or what we call 'material', terms. Plotinus, however, totally rejected corpuscular theories of ultimate matter. His cosmology, like that of Plato, Aristotle, and Stoic philosophers, invokes reason, structure, and design as the primary factors explaining the way the world is perceived to function. Unlike modern bottom-up, material models of explanation, with the world conceived as evolving from simpler to more complex states, Plotinus's philosophical ancestors largely proceeded by means of a top-down explanatory model. On their view, matter does not evolve, under its own causal power, into derivative elements and life-types. Rather, matter is taken to be the recipient of pre-existing forms or formative principles, and it is they (commonly called *logoi*, also translatable as formulae) that energize and characterize matter. (Thus, in Aristotle's understanding of sexual reproduction, the male parent's sperm endows uterine matter with specific animal form.)

Plotinus sets the scene by stating what he takes to be the shared view of Platonists, Aristotelians, and Stoics:

Text 1: All who theorize about so-called matter (*hyle*) agree in describing it as a certain *substrate* (*hypokeimenon*) and **receptacle** (*hypodoche*) of **forms** (*eide*)... But they disagree ... as to what the substrate nature is, and how and of what it is receptive. (*Ennead* II.4.)

To unpack this difficult sentence, we need to clarify the words substrate, receptacle, and forms. All three of these terms are basic to Plotinus's own understanding of matter.

The first thing to emphasize concerning Text 1 is the absence of physical determinacy from this preliminary account of matter. Plotinus, as he continues, states that some of those who share the *substrate* and *receptacle* theory (he means Stoic philosophers) do attribute 'body' to matter, whereas other philosophers (Platonists and Aristotelians) take matter as such to be 'bodiless' (*asomatos*).

However, the Stoics' corporeal matter, is not an empirical entity but theoretical plasticine, as it were. This is how it is described by Calcidius in his commentary on Plato's *Timaeus*:

Text 2: They (Stoic philosophers) say that what underlies everything that has qualities is matter, which is the prime substance (*essentia*) of all things, or their most primitive basis, [a body] without appearance by its own nature and without form.⁷

Here we can see how Stoic matter, corporeal though it is, fits Plotinus's generic description of matter as a substrate and receptacle of forms, i.e. a foundation of reality that is completely inert and amorphous.

'Substrate' (in Greek *hypokeimenon*) is an Aristotelian word. Plotinus explains the term as follows:

Text 3: About the receptacle (hypodoche) of bodies, let it be said that there must be something underlying (hypokeimenon) bodies, which is different from the bodies themselves, as is made clear by the changing of the elements (stoicheia) into one another ... There is a change from one form (eidos) into another, and so there remains that which has received the form of the engendered thing and lost the other one. (Ennead II.4.6)

The 'remaining' item, what receives the form and persists through the change, is matter in the sense of *substrate*. Plotinus exemplifies this notion by reference to metallurgy – making a cup out of gold, and then smelting it down again: the cup comes to be and ceases to be, while the gold of which it is made persists. The gold, as *substrate* for the cup, exemplifies the proximate matter that ordinary objects are made of. Proximate matter explains how ordinary objects move and change, while also retaining their basic physical identity. In this account of proximate matter Plotinus follows Aristotle to the letter, borrowing Aristotle's instance of gold. What, then are we to say about ultimate matter? Is there a persisting substrate for all things, even after they have been stripped bare, as it were, of all their perceptible properties?

This question brings us to Plotinus's other term for matter, *hypodoche*, translated 'receptacle. Plotinus took this metaphor from Plato. Here is a portion of what Plato says about the term:

Text 4: That nature which receives all the bodies ... has never in any way whatever taken on any characteristic similar to any of the

Calcidius, In Tim. 290 (SVF 1.86).
Cf. Aristotle, Physics 1.7.

things that enter it ... This is why we shouldn't call the mother or receptacle of what has come to be ... and of what is perceptible, either earth or air, fire or water, or any of their compounds or their constituents. But if we speak of it as an invisible and characterless sort of thing, one that receives all things and shares in a most perplexing way in what is intelligible, a thing extremely difficult to comprehend, we shall not be misled. (*Timaeus* 51a)

Plato introduces the obscure and characterless 'receptacle', which he also calls space, as the container of bodies, and therefore as extending throughout the physical world. This text along with its attendant doctrine was foremost in the mind of Plotinus when he attempted to clarify his own notion of ultimate matter. What I have called the Stoic plasticine notion, as cited in Text 2, was also influenced by Plato, but with the difference, observed by Plotinus, that the Stoic receptacle is not bodiless but taken to be a completely amorphous body.

Bodiless container, amorphous body – these are very obscure expressions. What philosophical thoughts are driving them? The answer has two related aspects, one I will call idealist and the other realist. The idealist aspect is the notion that ordinary things derive their identity, quality, and quantity from their forms or structures or intelligible natures, expressible in definitions or archetypes, principles that are fully accessible only to the mind. The realist aspect is the evident fact that ordinary objects are composites of a specific form (e.g. cat-form, daffodil-form) and of that in which the individual instance of that form is expressed or manifested – their particular physical and bodily make-up, like the wood of this bed or the gold of this cup. Ordinary objects are not bodiless containers or amorphous bodies, but in order for them to possess the specific identity, quantity and quality that they have, they each require, according to the theories I am discussing, a form-containing constituent entitled matter. The matter, then, is what *underlies* the form, or what *receives* the form, and enables the form to have magnitude or physical extension. In this analysis, then, form and matter are essentially correlative notions, presupposing one another, and not instantiated independently of one another. You cannot have form without matter or matter without form.

This co-dependence and correlativity fit Aristotle's and the Stoics' accounts of form and matter. When we study natural objects, we can focus either on what they are made of and on what persists throughout their life or existence, i.e. their material constituents, or on the forms that make them the particular things that they are – a cat or a tree etc.,

of a certain size, colour, etc. But Platonists such as Plotinus see a need to hugely complicate this analysis of form and matter. The complexity arises because, in their top-down analysis of reality, the forms that make natural objects particular cats or trees etc. are not fully and perfectly present in the objects' feline or arboreal matter. The matter of such objects is what makes them physical repositories of non-physical formative principles. Physical objects in Platonism are material copies of immaterial ideal substances, as David Sedley explained to this Institute in his December 2014 lecture on Plato's Theory of Forms. (You may care to recall Wordsworth's 'shades of the prison-house' that turn the 'light' of Plato's Forms into 'the light of common day' from his famous poem *Intimations of Immortality*). For Plotinus ultimate matter is an *insubstantial* substrate and receptacle of immaterial formative principles. In what follows we will see how he struggles to get this meaning across.

4.

In a systematic inventory of the perceptible world Plotinus sets out the following terms:

Text 5: Matter, form, composite, simple bodies, composite bodies, accidents and attributes, relation, quantity, quality, and motion. (*Ennead* VI.3.2)

This list of originally Aristotelian terms would be quite straightforward if Plotinus, like Aristotle, had regarded individual things - this tree, this cat - as the physical world's primary beings or independent substances. Instead, as a Platonist, Plotinus treats *physis*, his name for the physical world of natural objects, as the domain of only derivative beings. He even calls perceptible objects such as stones, trees and cats, *images*, the originals of which are the supra-sensible Intelligible Forms. While Plotinus is quite ready to write on occasion as if perceptible things have intrinsic Aristotelian forms and corresponding matter, this is approximate language. The only unequivocal Plotinian beings, are purely incorporeal, intelligible and intelligent entities, objects and activities of divine thought. Perceptible properties and natures are projections into matter that fall short of full reality.

We can now see that Plotinus's two terms for his 'so-called matter', substrate and receptacle (Text 1), belong to two different earlier theories. One of these theories, the Aristotelian substrate theory, is well designed to identify the proximate material of natural or manufactured things such as trees or cups (the wood or the gold that underlies

such forms) and to account for the primary elements of which wood and gold are formed. Neither proximate matter nor primary elements, however, account for the nature of matter as such, basic physical reality, as it were. The other theory, the Platonic receptacle and its Stoic successor, fulfill this latter role by positing a changeless, spatial container for all physical objects into which they come and go. This theory, however, does not explain the composition of proximate matter, what makes it golden or arboreal, nor does it explain why there are just four primary elements. In addition, neither theory fully faces the question of why there is a physical world, consisting of transient bodies, in the first place.

By synthesizing the substrate and the receptacle theories, Plotinus goes some way to responding to these points. In the process, however, he leaves us with an ultimate matter that is so dark that it is only describable in the negative terms of lack, or privation, or what it is not.

5.

The essay from which I drew Text 5 (Ennead VI.3) concerns the kinds of equivocal being that pertain to the physical world of change and flux. After positing matter as common to all bodies, Plotinus asks whether matter may be regarded as a genus. The Stoics had called their plasticine notion of material substrate 'primary substance' [Text 2] and so made it generic and foundational to everything that exists. Plotinus responds that matter cannot be a true genus because it has no essence; hence it does not confer anything substantive on objects. Substance, he argues, must exclusively be a function of form, intelligibility, structure.

May we, then, dispense with ultimate matter, and substitute for it a single genus of 'perceptible substance', call it body, that is essential and common to all terrestrial things – stones, earth, water, plants, and animals? The problem with that proposal, Plotinus urges, is that bodies are not uniform – some are complex and organic; others, like the four elements, are 'more matterish' (*hylikotera*), meaning less unitary and less determinate. Body, in other words, is too diverse a notion to constitute the ultimate foundation of all perceptible objects. Ultimate matter on this view must be something more primitive and inchoate than even the simplest body. To get at it, we have to resort to the mental operation of trying to separate all form, even the simplest determination, from embodied things and physical elements.

⁹ Ennead VI.3.9.

Plotinus's notion of ultimate matter seems to face two paradoxes, one conceptual and the other ontological. The conceptual paradox is the indispensability of an essentially imperceptible and indescribable substrate to the analysis of perceptible objects. Plotinus explains his position thus (*Ennead* II.4.5):

Text 6: Intellect discovers the doubleness of bodies. For it divides them until it arrives at something simple that cannot be further analyzed. But as long as possible, it proceeds into the depth of body. The depth of each body is matter. Therefore all matter is *dark*, because the formula (*logos*) is light. Intellect too is a formula. In seeing the formula that is on each thing, intellect takes what is below to be *dark* because it is beneath the light. It is like the way the eye, whose form is light, when it gazes at the light and at colours, which are lights, states that what lies beneath the colours is *dark and material*, concealed by the colours.

To do philosophical justice to this passage, we need to take light and dark quite literally, albeit with reference to mental vision. The obvious aspect or component of a body is its perceptible form. But bodies also have imperceptible depth. How do we know? By analogy with dark as the absence of light, Plotinus infers that bodies have a dark underside, consisting of the absence of what we can actually perceive of their make-up. Ultimate matter, on this account, is essentially something that defies description and perception. We know of it only in the way that we know that if we turn off a light, dark supervenes. Dark simply is the absence of light; there is nothing else to it.

Plotinus articulates the ontological paradox in the following passage (*Ennead* III.6.7. 3):

Text 7: Matter is an image and a phantom of bulk (ongkos), a striving for substantiality, a stable instability ... it has no strength but is lacking in all being. Whatever announcement it makes, therefore, is a lie, and if it appears great, it is small, if more, it is less; its apparent being is not real, but a sort of fleeting frivolity; hence the things that seem to come be in it are frivolities, nothing but phantoms in a phantom, like something in a mirror which really exists in one place, but is reflected in another; it seems to be filled, and holds nothing; it is all seeming.

Bulk or solidity is basic to any notion of body, but whence do bodies derive their bulk? From their matter, surely? But ultimate matter as

¹⁰ Cf. *Ennead* 1.8.9 where Plotinus repeats the notion of seeing the dark by cutting off the light of intellect.

such has no *real* bulk or solidity? Ultimate matter is a mere phantom of bulk. How do we deal with this regress? Does it mean that bulk or mass is in some sense illusory, a mere figment of our imagination?

Rather than answer that pressing question now, let me step back and say where I take Plotinus to be coming from in his mystifying statements about ultimate matter. Given his Aristotelian background, might we remove suggestions of paradox by interpreting the two quoted passages as rhetorical rather than doctrinal? As the substrate of the four elementary bodies, Aristotle's 'prime matter' is best interpreted as a purely conceptual or logical notion with no directly physical referent. The elementary qualities hot, cold, dry, and wet are basic to the simplest instances of Aristotelian matter that we can experience. There is no such Aristotelian *thing* as prime or ultimate matter. May we explain Plotinus correspondingly, as he himself sometimes suggests our doing?

Only up to a point, I respond, because ultimate matter, as understood by Plotinus, is absolutely necessary to the nature of the physical world. Ordinary objects, unlike ideal objects, are embodied. Embodiment is a function of ultimate matter as distinct from form. We cannot get at such matter, to examine it in the laboratory, because ultimate matter, as distinct from proximate matter, does not exist as a separable component of things. Yet it furnishes ordinary objects with the basic bodily properties that distinguish them from the ideal objects of thought, viz. spatial extension, changeableness, multiplicity, impermanence, and imperfection.

Plotinus also differs profoundly from Aristotle in crediting ultimate matter with supreme negative value – not as being 'evil', as some scholars like to say – but because ultimate matter negates the supreme positive value he attributes to determinate unity, identity, and intelligibility. What makes ultimate matter bad, illusory, phantomlike, for Plotinus is its complete lack of substantive identity, determinacy, and unity. Its badness is a function of what it lacks.

Plotinus also differs from Aristotle in the way he distinguishes between intelligible, proximate, and ultimate matter. All three of these types of matter satisfy the generic concept of being 'a substrate and receptacle', but they fit the concept in the distinct ways that

'Evil' has inappropriate theological connotations. Hence I disagree with parts of D. O'Brien's account in his paper, 'Plotinus on matter and evil', in L.P. Gerson, ed. *The Cambridge Companion to Plotinus* (Cambridge, 1996), 171–95. For a more balanced interpretation of matter's badness, even to the point of granting it 'an element of goodness', see G. van Riel, 'Horizontalism or verticalism? Proclus vs Plotinus on the procession of matter', *Phronesis* 46 (2001), 129–53.

pertain to the three distinct levels of Plotinus's overall metaphysical scheme, to which I now turn.

Intelligible matter, as the substrate of Intelligible Forms, belongs to the level of Nous/Intellect and is therefore unqualifiedly good. Proximate matter, as the substrate of perceptible forms, belongs to the level of Soul/Nature. Its value is correspondingly relative to the kind of phenomenal matter that it is, for instance, flesh, bone, bronze. Ultimate matter pertains to the bottom of this scheme, where forms have run out of all claims to substance, leaving only the residue of indeterminate substrate. In his essay on matter, Plotinus presents the topic in exactly this order, starting with the generic concept, and then passing, in turn, to intelligible matter, proximate matter, and finally, and at greatest length, ultimate matter.

Headed by the transcendent One, Plotinus's philosophy involves both a vertical and a horizontal dimension. The horizontal dimension has three aspects, ontological, cognitive, and axiological. The vertical dimension has five levels, ranging from the One down to ultimate matter, with a radical gap dividing the three incorporeal and eternal levels (One, Nous, and Soul) from the corporeal and mortal domain of Nature and the shadowy domain of ultimate matter.

I represent this scheme in the following diagram.¹³

Ontological status Mode of cognition Value

The One transcendence immediate union perfection
The One projects intelligible matter as substrate of Nous, so as to constitute the noetic realm of Intelligible Forms.

Nous being/actuality intellection goodness Nous projects Soul as generator of perceptible form copies.

Soul intermediacy discursive thought variability
Soul projects form copies into matter, to constitute embodied Nature.

Nature appearance/body/animate things perception inferiority

Ultimate Matter privation illusion badness

¹² See Ennead II.4.5.

For a clear introduction to Plotinus's metaphysical categories, see P. Remes, *Neoplatonism* (Berkeley & Los Angeles, 2008), 47–59.

According to this hierarchical scheme, ontology, cognition, and value are so related to one another that unity and stability are their common measure at the top and complete privation of stability and determinacy are their common measure at the bottom, as signified by ultimate matter. Plotinus's scheme states, then, that as things or levels become less unitary and stable and determinate, they become less real, less cognitively accessible, and less good. The scheme is an obvious successor to Plato's famous Sun. Line. and Cave analogies (Republic 6-7) but it differs importantly from these prototypes by its explicit incorporation of the principles One, Soul, and Matter. Plato presupposes the existence of bodies, and the inferior status of bodies as perceptible, non-knowable, changeable items, but he does not clearly explain why the world contains them. In Plotinus, Soul, the principle of animate life, creates bodies by generating perceptible images of Intelligible Forms in ultimate, formless matter. To put it another way, ultimate matter is the wall of Plato's cave, distorting true ideas by reflecting imperfect images of them.

The physical world, then, according to Plotinus, is an inferior embodied counterpart to the purely Intelligible and immaterial Forms. This secondary status does not make the physical world unreal or bad; Plotinus takes the physical world to be a trickle-down product of Intelligible Forms and as good as it can be, relative to its derivative status, but its contents, owing to their embodiment and matter, lack the unity and stability of the Intelligible Forms. Particular human souls simultaneously live a life of thought and of sense perception. They (i.e. we) convert apprehension of incorporeal thinkable and thinking realities into the corporeal, perceptible, and animated images that constitute ordinary objects. These objects, like the gold cup or the tree or the cat, lend themselves to analysis in terms of matter and form. But what can we say about matter, when we try to conceptualize it below the level of its proximate vegetable matter or animal matter or metallic matter, or below the level of such matter's constituents, such as the four elements?

6.

Plotinus starts his account of ultimate matter by reaffirming its complete tractability and inherent lack of quality and quantity. Whence, then does matter acquire colour, temperature, weight, size, and shape, which are the basic attributes of bodies Not from itself, evidently, but from

Text 9: The giver of shape and size ... that supplies everything, as it were from the realities (*ta onta*)... If the maker is prior to matter, matter will be just as the maker wants it to be, accommodating to everything including size ... The form supplies matter with everything that goes with and is caused by the formative principle (*logos*). (*Ennead* II.4.8)

How are we to understand 'the giver of shape and size' and 'the will of the maker'? The answer, supplied by the text, is form, in the sense of 'formative principle'. But formative principles do not simply float down, as it were, to matter from Nous, the Intelligible level of Plotinian reality. Formative principles [we may perhaps compare DNA, digital information, encoded algorithms] are mediated to matter; they are projected on to it, as I was just saying, by soul, in the sense of World Soul, the providential principle of embodied life. It is tempting to align Plotinus's World Soul and its will with the divine Demiurge of Plato's Timaeus, who imposes mathematical form on the corporeal traces that flit in and out of the 'receptacle'. 14 But this Platonic precedent can only be a loose approximation to what Plotinus is saying here. His ultimate matter is neither a set of corporeal traces nor an independently existing region of empty space. It is something so abstract and amorphous that mind, the mind of the World Soul, can make of it anything it chooses from the stock of Intelligible Forms. Matter only comes into consideration, as we have had occasion to note before, in the light of its correlativity to form.

Next Plotinus asks: 'How can one grasp an entity that has no size'? His response to this question amplifies the points just made concerning form and soul. Matter independently of form simply lacks size.

Text 10: The formative principle gave [edoke; note the tense] it a size that was previously absent. (Ennead II.4.9)

To conceptualize absence of size, Plotinus says, we need to invoke 'the soul's indefiniteness' (*aoristia*. *Ennead* II.4.10). By way of clarification for this expression, Plotinus first repeats his earlier assertion about the way the eye, in the absence of colour, can be said, in a way, to be affected by the dark. But is this really seeing? It can only be so described if the eye sees not nothing, but the absence of everything visible. By analogy,

Text 11: When the soul thinks nothing, it says nothing, or rather experiences nothing. But when it thinks matter (*hylen noei*), it is affected by an impression, as it were, of the amorphous. (*Ennead* II.4.10)

See Plato, *Timaeus* 53b.

During normal perceptual consciousness the soul thinks its perceptual objects in terms of their shape, size, and so forth, that is to say, in terms of their perceptible forms and proximate matter, such as the golden cup. The soul can recognize these things because, thanks to its rational faculty, it has the corresponding concepts. But when it comes to thinking of matter as such, ultimate matter, the soul arrives at an impasse, bringing us back to the ontological and conceptual paradoxes I brought up earlier. To continue with Plotinus's own extraordinary words (*Ennead* II.4.10):

Text 12: Having abstracted and removed everything in the whole composite item, the soul *obscurely* thinks this *obscure* non-rational residue, a *dark* thing that it thinks *darkly* and thinks non-thinkingly. And since matter itself does not remain amorphous, but is shaped in things, the soul too immediately thrusts on it the forms of things, from distress at the indefiniteness, as if it were afraid of being outside of beings and could not bear to spend any time on that which is not.

The soul cannot accept a representation of absolute indefiniteness, so it always bestows some form, however minimal, on matter.

Can ultimate matter, then, in view of its obscure and illusory status, be an objective constituent of the physical world? Bodies need bulk or mass (*ongkos*) to be the recipient of their magnitude and qualities. But since ultimate matter has no magnitude, how can it provide bulk or mass?

Plotinus answers this question by seeming, for the first time, to assign a positive function to ultimate matter. Drawing on his original description of matter as an incorporeal substrate, he says:

Text 13: What matter receives from forms, it receives *in extension*, because it is receptive of extension (*Ennead* II.4.11)... It is not a mass, but it is pictured as a mass because its primary attribute is the capacity for mass ... Matter is necessary both to quality and magnitude, and therefore also to bodies. It is not an empty name, but something that underlies even though it is invisible and without magnitude. (*Ennead* II.4.12).

What matter receives from forms, it receives *in extension*, and thus it becomes bulk or mass. How are we to take this claim? Is ultimate matter just empty space? That suggestion could fit its description as pure recipient and substrate. But ultimate matter cannot be empty space in our modern sense of the term, with its objective designation. How, moreover, could empty space endow bodies with mass?

The indefiniteness of ultimate matter gives it its capacity to receive the forms constitutive of bodies. Otherwise, if matter had its own magnitude, it would impose that magnitude on the forms it receives. By its reception of bodily forms 'matter becomes mass', or at least we imagine it so. When the forms of things that are naturally embodied encounter ultimate matter, they cause matter to acquire the magnitude appropriate to such bodies. As such, however, ultimate matter is always sheer void – 'an illusion of mass' – incapable of being credited with any size of its own. Ultimate matter is a *privation*, knowable or thinkable by what it is not, and hence something unavoidably dark in a metaphysical scheme that posits the identity of form and intelligibility. ¹⁵

Rather than shirk this conclusion Plotinus revels in it, as the following dizzying passage exemplifies (*Ennead* II.5.5):

Text 14: Since matter is nothing in itself, except what it is by being matter, it is not in actuality. For if it is going to be something in actuality, it will be what that thing is in actuality and not be matter. So it would not be matter absolutely, but only in the way that bronze is... So it is in actuality an illusion (*phantasma*), in actuality a falsehood ... Therefore, if it must be, it must not be in actuality, so that, in departure from true being it may have its being in non-being.

Plotinian matter is neither nothing nor something. He can call it a phantom, a mirage, a privation, but even these characterizations are meaningful only by courtesy of what matter actually lacks, namely any kind of form or describable or intelligible reality. In light of his Aristotelian inheritance, why didn't Plotinus take ultimate matter to be a purely conceptual substrate, separable only in thought from the primary bodies, the four elements? There are many possible answers to this question. Here are two.

7.

First, Plotinus the Platonist cannot avail himself of the robust Aristotelian notion that embodied beings are basic substances.

Plotinus insists (Ennead II.4.14) that absolute matter is always privation and essentially 'not-being' in response to Aristotle's position (*Physics* I.9) that matter loses its privation when the privation is replaced by its contrary.

Embodied things can only be diminished beings, according to him, because they are shadowy reflections of Intelligible Forms. Corporeality is their least substantive attribute. Bodies require matter, in order to be bodies, meaning occupants of space, but this material consistency deprives them of any claim to be unequivocal substances. Rather than underpinning the firm existence of bodies, matter accounts for bodies' impermanence and changeableness, and so prevents their being full-fledged entities.

My second rejoinder is to propose that Plotinian matter brings him quite close to George Berkeley's notorious doctrine that material substance is a self-contradictory notion of which there can be no idea and no knowledge. Recall what Plotinus says concerning the soul's vain attempts to achieve a positive and intelligible representation of matter. What our individual souls can actually think or perceive is the *formed* aspect, not the *material* aspect, of bodies. Plotinus presumes that there is more to perceptual things than we can perceive of them, namely their matter, but this is such a strange sense of 'more' that it is tantamount, as he repeatedly says, to indefiniteness or 'not-being'.

The perceptible form/matter compounds that he takes bodies to be are not self-subsistent and independent beings that simply exist in their own right 'out there', as it were. They are also, at a prior level, already in the soul, because, as he likes to say, soul is not 'in' body, but body is 'in soul' (*Enn*ead IV.3.20–2). This dependence of body on soul also goes some way to anticipate Berkeley's rejection of a mind-independent world of material things. Plotinus verbally agrees with Aristotle that perceptible objects are composites of matter and form, or substrate and qualities. Yet for Plotinus the matter, taken by itself, is not even a potential being but only a privation – an amorphous receptacle that contributes nothing except receptivity to the forms and qualities constitutive of bodies. Matter as such is a non-entity. That is what is the matter with it.

To return to our modern physicists' dark matter, are we to speculate that what is so called will eventually become clear to the eye of experimental reason? Or may it be the case that science is running out of resources to provide a fully intelligible account of what we have traditionally taken to be out there? If Plotinus has any cognitive relevance to physics, it will not be thanks to a resurgence of

For a different view, see M. Burnyeat, 'What Descartes saw and Berkeley missed', *Philosophical Review* 90 (1982), 3–40.

Platonic ontology, I suppose, but to the challenge he presents, like Berkeley, to our capacity to conceptualize a completely mindless physical space.¹⁷

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