

GOD AND MATTER IN LOCKE

An exposition of *Essay IV.x*

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A. Introduction

Although we never made time to talk it out thoroughly, Margaret Wilson and I shared an interest in, and enthusiasm for, the tenth chapter in Locke's *Essay IV*, entitled 'Of Our Knowledge of the Existence of a GOD.' In the present paper, written in sad tribute to her work and her person, I shall expound that deep, subtle, intricate, flawed chapter. While I shall evaluate its arguments as I go, I chiefly aim just to make clear what happens in those nineteen sections, which I shall refer to by their numbers alone.

They aim to show that 'we are capable of knowing . . . that there is a GOD' by cogently inferring this from secure premises. A god is any being that is 'eternal, most powerful, and most knowing;' given such a being, Locke adds laconically, 'it matters not' whether we call it God. This line of argument will be my topic in sections B through E.

Two subsidiary themes in the chapter concern matter. One is this: given that there is a god, is it (or he) material or immaterial? Although he argues at length for God's immateriality, Locke remarks in 13 that this in itself is of little moment. Someone with an otherwise correct theology is in good shape even if he wrongly thinks God to be made of matter - except, Locke adds, for a risk that he runs. Philosophers who are 'devoted to matter,' if they think God to be material, will comfortably conclude that everything is matter and will then 'let slide out of their minds' their theology, i.e. their view that the material world includes 'an eternal, omniscient, omnipotent being.'

Section 13 also argues that if the materialists do thus drift into atheism, 'they destroy their own [materialist] hypothesis.' This is too clever by half; it is neither well done nor instructive, and I shall not expound it.

Some of the Chapter's richest treasures concern God's immateriality. We should be grateful that Locke decided to dig into that topic, giving it more space than any other one issue, slight though his ostensible reason was to do so. I shall return to this in sections F through H, and to an important offshoot of it in I through K.

The chapter ends with two sections (18 and 19) on another question about matter: Given that God is immaterial, did he create matter? Locke envisages opponents who agree that God is eternal etc. and also immaterial, but who hold that matter is also eternal rather than created by God. Though this position includes a correct view about God's existence and nature, Locke attacks it because it 'denies one and the first great piece of his workmanship, the creation.' Locke's treatment of this is mostly plain and predictable; but it includes one tantalizing hint, a passage in which Locke, 'having brought us to a certain point with our mouths watering, [has] left us standing there.' Those words are Leibniz's (A VI vi 442; NE 442). He guessed (correctly) that 'there is something fine and important hidden under this rather enigmatic passage,' and guessed (again correctly) at what it is. But it is not clearly displayed in his text, still less so in Locke's; I shall explain it in section N, to which L and M are needed preliminaries.

B. 'Caused by nothing'

Locke's principal argument for the existence of a god rests on three philosophical mistakes, all crammed into his argument in 3 and 4 for the thesis that some eternal being has caused the existence of everything else. Here is its central stretch:

Whatever comes into existence must be caused to do so by something that already existed; therefore

There cannot be an existent thing preceded by a time when there was nothing; therefore
'From eternity there has been something.'

The argument relies on the further premise, asserted and defended in 2, that something exists now - for me the premise that I exist, for you that you do.

That middle part of Locke's journey to his theology is valid; but if we board the train one station earlier, and stay on it until one later, we encounter three errors.

One error - my topic in this section - occurs on the way to the first premise of the 'central stretch,' given above. Defending the thesis that that whatever comes into being must be caused to do so, Locke writes:

Man knows by an intuitive certainty that bare nothing can no more produce any real being than it can be equal to two right angles. If a man knows not that non-entity, or the absence of all being, cannot be equal to two right angles, it is impossible he should know any demonstration in Euclid.

Locke might reasonably hold, as Leibniz did, that there are no absolutely brute facts, that whatever is the case is explainable; which implies that whatever happens is caused to do so. That causal kind of 'explanatory rationalism' is respectable; but Locke claims further that it is intuitively certain - something which a little reflection will make blindingly obvious. That is because he makes a mistake about the logical form of its contradictory. Let 'Happen' be the name of some actual event, and let P be the proposition that *Happen was not caused by anything*; then Locke has to show with 'intuitive certainty' that P is false. He does this by taking it to say that *Happen was caused by nothing*, and construes that as assigning a cause to Happen, namely an item called 'nothing' and describable as 'the absence of all being.' This item, he says, cannot 'produce any real being,' that being patently beyond its powers.

This is purely an error. The form of 'Happen is caused by nothing' is not 'N causes Happen,' where 'N' stands for a name, but rather 'For no x: x causes Happen.' For Happen to be caused by nothing is for it to occur uncaused. Perhaps all actual events are caused, but it is not absurd to suppose otherwise, as Locke implies. He repeats the mistake in 8, contending that 'a time wherein there was perfectly nothing' is a 'manifest contradiction' because it is 'of all absurdities the greatest, to imagine that pure nothing, the perfect negation and absence of all beings, should ever produce any real existence,' and again when he speaks of the impossibility 'that nothing should of itself produce matter' (10) and 'that nothing, or the negation of all being, should produce a positive being, or matter' (11). This mistake enables him to ignore the possibility that matter should come into existence *ex nihilo* without being *produced* at all.

Locke has company in making that mistake. Descartes makes it when defending the principle 'An effect contains nothing which was not previously present in the cause.' His defence is a threat: reject that principle, he writes, and you have to allow that something could be produced by nothing. 'The only reason why nothing cannot be the cause of a thing is that such a cause would

not contain the same features as are found in the effect.¹ The phrase ‘such a cause’ shows Descartes treating ‘nothing’ as the name of a thing, as does Locke’s writing of the impossibility ‘that nothing should *of itself* produce matter.’ Leibniz, to my surprise, endorses the early stages of Locke’s God argument in terms suggesting that he too follows Descartes and Locke in misunderstanding the logic of ‘nothing’ (A VI vi 435f; NE 435f).

It is eerie to see these men, who are so much abler than you and I are, confidently mishandling something that we easily get right.² It was quantifiers that raised the shades and let the light in for us. They will also prove useful in what comes next.

C. The sliding quantifier

What I have called the ‘central stretch’ of Locke’s argument concludes that ‘from eternity there has been something.’ The second of the three errors that I mentioned in section B occurs in what Locke takes that conclusion to mean. Assuming that past time is infinite, his premises entitle him to it if it means:

At every past time something existed.

Locke, however, claims to have shown this:

There is something which existed at every past time.

This move from ‘There has always been something’ to ‘There is something which there has always been’ is the second error. Roger Woolhouse has pointed out to me that even with help from that slide, Locke gets only a thing that never began, not one that will never end; so even if the slide were legitimate it would not bring him to an eternal thing.

The third error occurs in 4, where Locke writes of ‘this eternal source of all being.’ That confirms the previous error - Locke really has inferred that some one thing has existed eternally - and now he infers further that this one thing caused the existence of everything else.

I shall rehearse those two troubles more fully, to make plain the mishap that has occurred in Locke’s thinking. Using ‘x’ to range over presently existing non-eternal things, and ‘t’ to range over past times, Locke makes a case for this:

$(x)(t)(\exists y)((y \text{ exists at } t) \ \& \ (y \text{ caused } x \text{ to exist}))$.

Given any present object x and any past time t, there existed at t something that caused the existence of x. This could be true even though that past cause y has since gone out of existence; because it could have caused z to exist, which then caused x to exist, so that y causes x only through transitivity of causing, going out of existence before y comes into existence. Locke, however, rules that out by (mis)understanding his result in a manner that moves the existential quantifier to the left. This brings him to the stronger conclusion:

$(x)(\exists y)(t)((y \text{ exists at } t) \ \& \ (y \text{ caused } x \text{ to exist}))$.

Given any present object x, there is some other thing which existed at every past time and caused the existence of x. Then by a further invalid move - signalled by the phrase ‘this eternal source of all being’ - he further strengthens his conclusion by what amounts to a second quantifier-shift:

$(\exists y)(x)(t)((y \text{ exists at } t) \ \& \ (y \text{ caused } x \text{ to exist}))$.

There is something which existed at every past time and caused the existence of every present object. The existential quantifier has now slid to the left a second time. We start with a formula

¹. Descartes, Replies to Second Objections, AT VII 135; CSM II 97. I have slightly amended the translation.

². And that Hume easily got right! See *Treatise* I.iii.3, p. 81.

which yields no eternal thing; the first slide takes us to ‘Each non-eternal thing has an eternal thing in its causal ancestry;’ the second bustles us further along to ‘One eternal thing belongs to the causal ancestry of every non-eternal thing.’

Leibniz picks on the first slide, accurately explaining its role and its fault. He then puts an unerring finger on the second, which takes Locke to the thesis ‘that a single thing gives existence to [all] the others.’ Leibniz’s comments help us to see that this second slide gives Locke his only route to the eternal existence of a single thing that is powerful and productive enough to count as a god. (Nearly always in this chapter, by the way, Locke uses ‘god’ as a sortal term, in the phrase ‘a god,’ though the proper name ‘God’ does occur half a dozen times. I can learn nothing from the reasons for the difference, or from Locke’s often writing both the name and the sortal in capital letters.)

D. The eternal being thinks

Having concluded that some one eternal thing caused the existence of everything else, Locke infers in 4 that this thing also caused all the rest to have whatever ‘powers’ they possess. I accept this without comment. In 5 he argues onward to this effect:

- (i) I have perception and knowledge, and so
- (ii) I was caused to have them by the eternal entity, and so
- (iii) the eternal entity itself has them .

He offers i as self-evident, and in 4 he argues for the move from i to ii. I shall not comment on these two points.

What of the move from ii to iii? Many philosophers would have accepted it on the grounds that causing is giving, and you cannot give what you do not have (either straightforwardly or in a higher-level manner), which implies that you cannot cause thought unless you have it. Thus Locke in 10:

Whatsoever is first of all things must necessarily contain in it, and actually have, at least, all the perfections that can ever after exist; nor can it ever give to another any perfection that it hath not, either actually in itself or at least in a higher degree.

He adumbrates this line of thought at the end of 4, writing that the eternal source of all being must be the source of all power ‘and so this eternal being must be also the most powerful.’

Despite these pointers in 4 and 10 to the idea that causing is giving, and that you can’t give what you don’t have, Locke in 5 argues in an entirely different way to his conclusion that the eternal entity has perception and knowledge. Rather than relying on a thesis about properties or perfections in general, he argues from supposed facts about thought in particular. In sections G and H below, I shall discuss what facts they are, and how they yield that result.

On the strength of the arguments that I have reported - the ones in his first five sections - Locke concludes: ‘Our reason leads us to the knowledge of this certain and evident truth, that there is an eternal, most powerful, and most knowing being; which whether any one will please to call *God*, it matters not’ (6). From this, he adds, we can easily deduce ‘all those other attributes which we ought to ascribe to this eternal being.’ He scolds anyone who holds the ‘sillily arrogant’ view that ‘he has a mind and understanding in him, but yet in all the universe beside there is no such thing.’

In 7 Locke explains why he does not argue instead from ‘the idea of a most perfect being.’ Different proofs of the same truth, he says shrewdly, will appeal to people variously, according to ‘the different make of [their] tempers and application of their thoughts;’ but if one wants to

silence atheists it is ‘an ill way’ to go about it to rely solely on an argument from idea of a most perfect being, because many people have no such idea. The materials of *his* argument, he proclaims, are available to everyone.

There have been two famous theological arguments starting from an ‘idea of God,’ each employed by Descartes. One tries to get God’s existence out of the logical powers of the concept (‘idea’) of God; the other out of the need for an adequate cause for one’s thought (‘idea’) of God. Locke did sometimes attack the former, the conceptual argument;³ but which of the two is his target is not clear - there are turns of phrase pointing each way.

E. The ‘knock, impel’ argument

At the end of 7 Locke says that he will ‘go over some parts of this argument again, and enlarge a little more upon them;’ but he does not. Section 8 repeats previous arguments without enlarging on them, arriving again at the conclusion that ‘something must be from eternity’ and asking what kind of thing that must be. Section 9 sets the scene for Locke’s answer by dividing existents into those that are and those that are not ‘cogitative,’ meaning ‘possessed of perception and knowledge.’ Locke will argue, in the long section 10, that the eternal cause of everything else must be a cogitative being.

He here assumes that incogitative things must be made of matter, and he argues that no incogitative material thing could cause perception and thought to occur. After a little flourish concerning the impotence of immobile matter, Locke turns to matter that has eternally been in motion. This cannot cause thought, he says, because:

Matter, incogitative matter and motion, whatever changes it might produce of figure and bulk, could never produce thought . . . Divide matter into as minute parts as you will (which we are apt to imagine a sort of spiritualizing, or making a thinking thing of it) vary the figure and motion of it as much as you please; a globe, cube, cone, prism, cylinder, &c. whose diameters are [as small as you like] will operate no otherwise upon other bodies of proportionable bulk than those of an inch or foot diameter; and you may as rationally expect to produce sense, thought, and knowledge by putting together in a certain figure and motion gross particles of matter, as by those that are the very minutest that do anywhere exist. They knock, impel, and resist one another just as the greater do; and that is all they can do. (10)

I call this the ‘knock, impel’ argument. It is extraordinarily like - though not copied from - a favourite one of Leibniz’s:

Perception . . . cannot be explained on mechanical principles, i.e. by shapes and movements. If we pretend that there is a machine whose structure makes it think, sense, and have perception, then we can conceive it enlarged, but keeping to the same proportions, so that we might go inside it as into a mill. Suppose that we do: then if we inspect the interior we shall find there nothing but parts which push one another, and never anything that would explain a perception. Thus perception must be sought in simple substances, not in what is composite or in machines.⁴

The assumptions that drive Locke’s argument are both present here - that obviously the movements of big bits of matter could not cause thought; and that what big bodies cannot do

³. I learned this from R. I. Aaron, *John Locke*, p. 242.

⁴. Leibniz, “Monadology” 17, G VI 609; AG 215; my translation.

small ones cannot either because, as Leibniz says in another statement of the ‘mill’ argument, ‘We know that the only essential difference between coarse bodies and fine ones is the difference of size.’⁵

Three things are wrong here. The claim that ‘we shall find there nothing but parts which push one another’ (Leibniz), or that ‘They knock, impel, and resist one another . . . and that is all they can do’ (Locke), relies on two false prejudices: that further researches into the large-scale physical world would never take physics beyond the bounds of impact mechanics, and that the very small differs from the large only in size. Dogmatism about the former of those - without which the ‘knock, impel’ argument evaporates - contradicts Locke’s usual and best thoughts on the future of physics, which are cautiously pessimistic.⁶

Even supposing that matter has only the properties acknowledged in impact mechanics, does it follow that matter cannot produce thought? The argument’s third defect is its dogmatic Yes to this. Like Searle in a more recent argument,⁷ Locke and Leibniz offer a thought-experiment, and treat the intuition which it evokes as though it were established doctrine. Locke puts it strongly in 11: ‘It is as impossible that incogitative matter should produce a cogitative being as that nothing, or the negation of all being, should produce a positive being or matter.’

Section 10 contains some elegant grace notes relating in part to the flourish about immobile matter (track his uses of ‘first or eternal’). These are enjoyable and worth thinking about, but I have enough on my plate without them.

F. Why God must be immaterial: opening shots

In 12 Locke undertakes to consider ‘what doubts can be raised against’ his conclusion. In fact, he does no such thing, but rather devotes 14 through 17 to opposing anyone who, while granting that there must be an eternal knowing being, holds that this being is material. This does not contradict anything for which Locke has centrally argued, as he admits in 13: ‘Let it be so; it equally still follows that there is a GOD. For if there be an eternal, omniscient, omnipotent being, it is certain that there is a GOD, whether you imagine that Being to be material or no.’ I reported earlier his unconvincing reason for discussing this question here. The real reason, I suspect, is this: Locke had discovered that the question of whether God could be a material thing leads to broader issues about how thought relates to matter; he had formed views about these, wanted to work them into the *Essay* somewhere, and chose IV.x as the best place he could find.

Locke works through the material-God hypothesis by arguing against a sequence of special cases of it, hoping that they jointly exhaust the genus.

In 14 he addresses the idea that ‘all matter, every particle of matter, thinks’ or, as he puts it two sentences later, that ‘matter as matter . . . is cogitative.’ He cuts a corner in assuming that if every particle thinks then every particle is eternal and thinking in the manner that at least one of them has supposedly been proved to be: ‘. . . then there would be as many eternal thinking beings as there are particles of matter, and so an infinity of Gods.’ This does not follow, because this is possible:

⁵. Leibniz, untitled piece, G VII 328.

⁶. This point is made in Michael Ayers, *Locke*, vol. 2, p. 181.

⁷. John R. Searle, “Minds, Brains, and Programs”.

Every particle of matter is eternal, and thinks. There is no single source for all the thought in the universe, because thought is and always was spread evenly throughout the (material) world.

If things stand thus, far from there being an infinity of gods there is no god.

These particles would also fail to be gods through not being suitably powerful. Locke has already made that point in 10, where he writes of ‘an infinite number of eternal finite cogitative beings, independent one of another, of limited force . . .’⁸

Still, Locke may be right in thinking that his opponents ‘will scarce say’ that every particle thinks, even though this does not entail an extreme polytheism. He goes on to say that it will be especially difficult for his opponents ‘to make out to their own reasons a cogitative being out of incogitative particles.’ This jumps over the next two Sections, and looks to 17.

Section 15 discusses the idea that God is a single ‘cogitative’ atom. Against this Locke brings a dilemma with one ad hominem horn. (i) If the one atom caused the rest, he writes, then ‘we have the creation of matter by a powerful thought, which is that the materialists stick at.’ If his opponents say that the one atom does not create through thought but in ‘some other way, which is above our conception,’ Locke adds, that would ‘still be creation, and these men must give up their great maxim, *ex nihilo nil fit.*’ I am not convinced of the soundness, or indeed fully clear about the meaning, of this addition; but I shall not discuss it here. (ii) There remains the idea that all the atoms are eternal though only one is cogitative and is God. This, Locke writes, ‘is without any the least appearance of reason to frame any hypothesis’ - apparently meaning that it is too obviously absurd to be worth discussing. He continues: ‘Every particle of matter, as matter, is capable of all the same figures and motions of any other; and I challenge any one, in his thoughts, to add any thing else to one above another.’ If that is valid here, Locke could have brought it in earlier and saved himself some labour.

In 16 Locke considers whether God might be not an atom but a more complex material system whose special powers come from how its parts relate to one another. He confines this to static systems, saving movement until 17. ‘Nothing can be more absurd’ than this, he writes, because a mere spatial arrangements of parts obviously cannot increase a thing’s powers, and therefore a static material system, however complex, ‘is but one lump, and so can have no privileges above one atom.’ That last clause comes from the start of 17 which really belongs within 16.

G. Why God must be immaterial: the ‘regulate’ argument

Now at last Locke comes to the liveliest option: ‘It only remains that it is some certain system of matter duly put together that is this thinking eternal being;’ and now we are to understand that the system in question has moving parts and owes its cogitative nature to how they move. Locke tries to rule this out through an argument which, though it superficially resembles the ‘knock, impel’ one in 10, is much more vital than the earlier argument was.

Each has a conclusion of the form ‘Thought could not arise in consequence of particle-movements which . . .’ with the blank filled by a certain condition. In the ‘knock, impel’ argument of 10, it is (in my words) ‘. . . conform to impact-mechanics as understood in the late 17th

⁸. I am grateful to Roger Woolhouse, whose extensive comments on a draft of this paper saved me from several errors and also helped me in other ways to improve the work. This paragraph, for instance, is entirely due to him.

century.’ In 17’s ‘regulate’ argument (as I shall call it) the condition is (in Locke’s words) ‘. . . are not guided or regulated by thought.’ Locke is right to insist that the ‘certain system of matter’ must not be guided in its operations by the thoughts of any designer or guardian. This ‘system’ is to be the source of all the mentality in the universe; so if there are any designers or guardians, they must result from its workings and thus cannot contribute to them.

The ‘knock, impel’ argument mentions no such condition. Ayers implies the contrary, expounding that argument (ch. 14) in terms of what will come from ‘the undirected or random motion of particles’ if a system is ‘left to itself,’ and saying that ‘what is lacking is suitably potent external direction;’ but the text of the ‘knock, impel’ argument contains no basis for any of those phrases that I have quoted from Ayers. They are appropriate to the ‘regulate’ argument, which Ayers seems not to have distinguished from the other. Nor did Pringle-Pattison. In his heavily abridged edition of the *Essay*, he retains the whole of IV.x except for section 17, the best thing in the entire chapter. Presumably he thought that 17’s ‘regulate’ argument merely repeats what has appeared in 10 as the ‘knock, impel’ argument. In fact, they are as different as hawk and handsaw.

The core of the ‘regulate’ argument was adumbrated back in 5:

It [is] as impossible that things wholly void of knowledge, and operating blindly and without any perception, should produce a knowing being as it is impossible that [etc.]. It is as repugnant to the idea of senseless matter that it should put into itself sense, perception and knowledge as it is repugnant [etc.].

Locke also hints at the same line of thought in 6, where he castigates the arrogance of anyone who would ‘suppose man alone knowing and wise, but yet the product of mere ignorance and chance.’ He lays the thought out more fully in 17:

If it be the motion of its parts on which its thinking depends, all the thoughts there must be unavoidably accidental and limited; since all the particles that by motion cause thought, being each of them in itself without any thought, cannot regulate its own motions, much less be regulated by the thought of the whole, since that thought is not the cause of the motion (for then it must be antecedent to it, and so without it), but the consequence of it, whereby freedom, power, choice, and all rational and wise thinking or acting will be quite taken away. So that such a thinking being will be no better nor wiser than pure blind matter; since to resolve all into the accidental unguided motions of blind matter, or into thought depending on unguided motions of blind matter, is the same thing; not to mention the narrowness of such thoughts and knowledge that must depend on the motion of such parts.

This deep and abstract argument does not appeal to intuitions of impossibility in the unhelpful manner of the ‘knock, impel’ and ‘mill’ thought-experiments and their recent descendants; nor does it assume that 17th century mechanics is the final truth in physics, or that the laws governing the very small must be those of the large. How, then, does it work?

The argument implies that there is some kind of regularity or orderliness such that:

--thought must have it,-something that has it cannot be caused by something that lacks it, and-no movements of bits of matter can have it unless they are guided by thought.

I say ‘There is some kind of regularity . . .’ because the argument would be plainly wrong if it concerned regularity as such, for then it would imply that the movements of particles not guided by thought can only be a chaotic jumble. Locke knew better than that - e.g. that a pendulum clock moves in an orderly way purely because of its material structure.

What, then, was he talking about? He might say: ‘My topic is a certain very high *degree* of ordered complexity that thought requires. The behavior of a pendulum clock, though admittedly regular, is too simple to be an example of what I am talking about.’ But that would be a risky line to take. Given that a simply structured clock can exhibit simple patterns of behavior, could not more complex patterns - up to any level you like - be achieved by suitably complex physical things? I cannot doubt that Locke would rightly answer Yes.

H. Mechanism and teleology

How, then, is the ‘regulate’ argument supposed to work? Faced with my point about the movements of a clock, Locke would reply that those movements are wrong not in degree of ordered complexity but rather in kind. What kind might he be referring to? The only plausible candidate seems to be the kind *teleological*. Then the argument would run as follows. (i) Mentality essentially involves teleology: it is because the mind reaches out to possible futures that it leads people to do things so as to bring about various upshots, thus endowing them with ‘freedom, power, choice;’ the teleological nature of mentality makes possible ‘rational and wise thinking [and] acting.’ (ii) Teleology cannot be conferred upon a system by causes that do not themselves manifest it - ones that are ‘wholly void of knowledge, and operating blindly,’ reflecting ‘mere ignorance and chance.’ (iii) There cannot be anything goal-oriented about the movements of matter unguided by thoughts, the ‘accidental unguided motions of blind matter.’ Therefore (iv) no such movements could cause mentality.

I have stated the argument using phrases of Locke’s that suggest that he was thinking of teleology. From now on, I shall assume that he was; I have no further defence of that.

The argument is valid, and its premise i is true. The best way to get mentalistic concepts rooted in the physical world is through teleology: we get mentality launched through theories about how animals do things that they think will lead to certain upshots.⁹ But ii is suspect and iii false. Although much work remains to be done on this question, many philosophers today rightly believe that goal-pursuing behavior can be explained mechanistically, i.e. in terms of its efficient causes, without reference to any goal, purpose, or desire. When I reach up to pick an apple from the tree, that movement of arm and hand has complete chemical causes; and my reaching for the apple can also be explained in terms of my desire for an apple and my belief that this is a way to get one. These are two explanations for a single event, which they conceptualize in different ways.

Even before the work had been done on how this could be so - i.e. on why the existence of the chemical explanation does not invalidate the other - there were warning signs which Locke might have heeded. He thinks of the vital processes of plants as reducible to the mechanics of matter, seeing them as upshots purely of how particles move and bump; yet can an account of a plant be plausible if teleology does not figure in it? Apparently Locke thinks so. The seemingly teleological aspects of a plant, he holds, can be explained *away* mechanistically, i.e. in terms of structure and physics. He describes an oak tree in terms of ‘such an organization of those parts as is fit to receive and distribute nourishment’ etc.;¹⁰ and that use of ‘organization’ suggests that he thinks that the functioning of the oak can be explained in terms of particle-mechanics, once the initial structure exists. Elsewhere he says it outright:

⁹ I defend this in Jonathan Bennett, *Linguistic Behaviour*.

¹⁰ *Essay* II.xxvii.4. Unadorned references with that format in the text are to Book, Chapter, and Section of the *Essay*.

This faculty of perception seems to me to be that which puts the distinction betwixt the animal kingdom and the inferior parts of nature. For however vegetables have, many of them, some degrees of motion, and upon the different application of other bodies to them do very briskly alter their figures and motions, and so have obtained the name of sensitive plants, from a motion which has some resemblance to that which in animals follows upon sensation, yet I suppose it is all bare mechanism, [like] the shortening of a rope by the affusion of water, . . . without any sensation in the subject, or the having or receiving any ideas. (II.ix.11)

Locke implies here that some animal behavior cannot be explained through ‘bare mechanism’ but only by reference to thought or perception. This implies that animal thought itself - including human thought - cannot be explained through bare mechanism, and I have disagreed with that. My present point, however, concerns the risk Locke runs in making that claim about animals while allowing that all the behavior of plants *can* be explained mechanistically.

He might have seen for himself that it was dangerous to claim a sharp line between organisms whose movements can, and ones whose movements cannot, be explained purely physicalistically. He put all animals on one side of the line, granting a dim mentality even to oysters; and he should have seen that it is implausible to suppose that oysters cannot be explained mechanistically while oak trees can. But where else could he draw the line? The only stable, sharply delineated locus for it is Descartes’s, between humanity and all the rest; but a price has to be paid for that!

I say only that Locke should have been uneasy and suspicious, not that he should have seen in detail how the behavior of a physical system can be purposeful or goal-seeking yet also explainable mechanistically.

I. The strength and depth of the ‘regulate’ argument

Even if the ‘regulate’ argument does not turn on teleology, my previous account of its form still stands: There is some kind of regularity or orderliness such that:

- thought must have it,
- something that has it cannot be caused by something that lacks it, and
- no movements of bits of matter can have it unless they are guided by thought.

The ‘knock, impel’ argument concludes that interactions amongst moving particles cannot cause thought, whether or not they are thoughtfully guided. Even with such guidance, they are still just particles knocking into one another; and that argument - Locke’s version of Leibniz’s ‘mill’ - holds that thought obviously cannot arise from such a source. Even if Locke sticks to that, however, the ‘regulate’ argument still has work to do, because its third line can be strengthened to speak of more than just the movements of matter. Replace the third line by this:

- no happenings of any kind can have it unless they are guided by thought,
- and then the conclusion is something that the ‘knock, impel’ argument does not offer - namely that the first thought in the universe could not be the upshot of *any* complex system of events which taken singly are not thought-involving.

Sensible people today believe, as Locke did, that life is not basic, but is rather an upshot: when God, or the world, inter-relates a number of chemical events in the right way, their totality constitutes a living organism, even though there is nothing living about any of the events taken singly. Well, if the ‘regulate’ argument showed anything it would show mentality to be unlike vitality in that respect. So thought as such cannot have natural causes or explanations: if it results causally or logically from simpler non-thoughtful events, these must be thoughtfully manipulated.

This holds even if thinking things are immaterial. One might conjecture that certain immaterial substances are subject to processes which, though severally thoughtless, inter-relate to form a complex out of which thought arises; but the ‘regulate’ argument declares that this cannot occur unless those processes are guided by already existing thought. (The ‘knock, impel’ argument says nothing about this hypothesis.)

Locke would accept this calmly, I suppose. When he entertains the ‘probable’ view that thinking substances are immaterial, he seems to envisage their cogitative nature as *basic* in them and not as an upshot of any more fundamental properties or processes. There were, in any case, no obvious candidates for the role of more fundamental items out of which thought might arise in an immaterial substance.

Still, Locke faced a question about how a person’s body relates causally to her mind, supposing the latter to be an immaterial substance. At the outset of the *Essay* he says that he will not concern himself with the question ‘by what . . . alterations of our bodies we have come to have any sensation by our organs or any ideas in our understandings’ (I.i.2), apparently assuming some causal flow from body to mind. He goes straight on to disclaim also the question ‘whether those ideas do in their formation, any or all of them, depend on matter or no.’ That sounds like agnosticism about whether bodies act on minds, but it cannot be, for the *Essay* is packed with evidence that Locke was not agnostic about that. He was sure, for instance, that some of our perceptual states result from the causal action of other bodies on ours and of the latter on our minds.

Suppose Locke went beyond that, and held that all events in one’s mind supervene on events in one’s body; and suppose further that he combined this with the view that minds are immaterial substances. That would not conflict with anything in the ‘knock, impel’ argument. The latter contends that interactions of material particles cannot produce or explain mentality *as such*; but Locke could maintain that the immaterial substance’s own basic intrinsic nature is to be thinking - that mentality is not caused in it by the body - but that nevertheless all the details of its mental life, all the facts about what ideas it has and what processes it undergoes, causally supervene on events in the body.

While the ‘knock, impel’ argument presents no obstacle to the view that mental events wholly supervene on bodily ones, the ‘regulate’ argument condemns it except in the special case where the bodily events are mentally guided. According to the ‘regulate’ argument, thoughts must have a certain form or structure which unguided unthinking items cannot have; so the life of the mind could wholly supervene on events in the body only if the latter were guided by a controlling mind. Most of what needs to be said about that can easily be carried over from my next topic; so I leave it now.

J. Thinking matter

Locke’s favorite example of a question to which we may never know the answer: Does any matter think? That such a simple, briefly statable question should be ‘a point which seems to me to be put out of the reach of our knowledge’ (IV.iii.6) had for him the kind of teasing charm we find in the unsettled status of Goldbach’s neat little conjecture. Although he says that probably no matter thinks, Locke admits to having no solid evidence for this opinion. For all he knows to the contrary, he says, each of us may be a thinking animal, rather than an animal associated with an immaterial mind that does the thinking. I have been exploring the latter option a little; let us now

turn to the former. What, exactly, does Locke have in mind when he speaks of the possibility that we are thinking animals?

While contending that there may be thinking matter, Locke acknowledges this to be a *prima facie* difficult notion (IV.iii). Some of his phrases suggest that ‘solid’ and ‘thinking’ verge on being mutually contradictory, but that is not his view. Property-dualism, which strongly informs the *Essay*, implies that no entailments or contradictions obtain between mentalistic and materialistic properties; so any self-consistent set of mental predicates can consistently be added to any materialistic description of a thing. Locke implies this himself when he writes that solidity and thought are ‘both but simple ideas, independent from one another’ (IV.xxiii.32). Those ideas could not be ‘simple’ (in his sense) in themselves; but they could be simple relative to one another, in the sense of being logically unrelated. In that case there would be no conceptual obstacle to a single substance’s having both.

Still, a question remains about the nature of this joint possession. If a material thing has mentalistic properties, it might be (i) that these two aspects of it have nothing to do with one another except for being jointly instantiated by a single thing. Alternatively, it might be (ii) that the thing’s properties of one of the two kinds somehow explain, rationalize, even cause its having properties of the other kind.

When Locke said that God may have ‘superadded’ thought to some material things, this suggested to many people that he had in mind: God takes a material thing and by brute force simply *adds* thought to it. This picture was encouraged by Locke’s writing: ‘We know not . . . to what sort of substances the Almighty has been pleased to give the power of thinking, which can be in any created thing only by the good pleasure and bounty of the creator.’ (IV.iii.6) He seems to think of this ‘good pleasure’ as a perfectly free choice, unconstrained by reasons.

Leibniz, understanding Locke in that way, shrilly dissented. This ‘good pleasure of the creator,’ he protested, ‘would be neither good nor pleasure if God’s power did not perpetually run parallel to his wisdom’ - that is, if there were not reasons for God’s choices (A VI vi 302; NE 302). As a prophylactic against thinking that God might give something a material nature and then baselessly endow it with some mentalistic properties as well, Leibniz recommends the grounding principle, as I call it:

Whenever we find some quality in a subject, we ought to believe that *if we understood the nature of both the subject and the quality we would conceive how the quality could arise from it*. So within the order of nature (miracles apart) it is not at God’s arbitrary discretion to attach this or that quality haphazardly to substances. He will never give them any that are not natural to them, that is, that cannot arise from their nature as explicable modifications. (A VI vi 66; NE 66, my italics)

By ‘the nature of the subject’ Leibniz means its *basic* properties, ones that are not grounded in something deeper still; for otherwise there would be an infinite regress of groundings. We might challenge Leibniz thus: ‘Given that a thing’s basic nature includes its being material, why should it not *also* include its being mental? Granted the property-dualist assumption that neither of these is reducible to the other, could not a single thing have both? That was Spinoza’s view. Although two attributes are logically unrelated to one another, he held (*Ethics* 1p10s), they may still be possessed by a single substance.’

Leibniz would reply that it would be disorderly and unreasonable for God to give a substance two basic natures that were unrelated except for belonging to a single substance. Locke’s position is intolerable, he would say, because it supposes that a thing might be both material and thinking

without these two being inter-related in any of their details; and it doesn't help to plead that each of these natures of the thing is basic in it. (Spinoza, incidentally, could agree with this. The attributes of thought and extension are not really basic in his metaphysic: he says that an attribute is 'what the intellect perceives of a substance as' basic in it, not what *is* basic in it.¹¹ A unified common essence underlies the attributes, which 'express' it; and that really basic essence is what enables the world of matter to be strictly isomorphic to the world of thought. So Spinoza's metaphysic does not, after all, entail that a thing can have more than one basic nature.)

K. Locke and the grounding principle

I have lingered on the grounding principle only because Michael Ayers has maintained that Locke accepted it too, and that Leibniz misunderstood what he had said about God's superadding thought to matter:

Locke's famous speculation of thought 'superadded' to 'a system of matter suitably disposed' does not, as Leibniz (if only polemically) assumed, envisage brute, arbitrary correlations which in some metaphysically mysterious, even quasi-miraculous way have managed to stick an incorporeal accident onto a material subject. Rather, he was proposing that it may be, for all we know, within the non-miraculous and intelligible potentialities of matter, when organized by a supreme intelligence, to constitute a thinking thing in something like the way in which it can constitute a living thing, a plant or an animal. (Ayers, *Locke* II p. 169)

Most of Locke's readers have not understood him in that manner; in this respect Leibniz seems to be in the majority. Margaret Wilson argued this point against Ayers, and I am inclined to think that she and Leibniz are right about it.¹²

Through the rest of this section, however, I shall run with the supposition that Ayers is right: when Locke allows that some matter may think, he is granting the possibility of a thesis I shall call NTM (for 'naturally thinking matter'):

Some matter thinks because of how it is materially organized, its thought arising naturally out of its material nature.

I am interested in how this relates to other things that Locke has written. We can immediately see that NTM contradicts the 'knock, impel' argument, which concludes that thought cannot arise out of purely material goings-on; but then that is a bad argument anyway, and I have no more to say about it.

How does NTM relate to the 'regulate' argument? The latter says that unguided movements of particles could not produce thought, which implies that if any material things think, and their thought arises naturally from material events that occur in them, those events must be guided from the outside, presumably by God. In just one place, Ayers seems to envisage divine interference in how particles move: '. . . features of the world which could only have arisen from an initial state which . . . was carefully chosen rather than chaotic, by motions which were initially directed rather

¹¹. Spinoza, *Ethics* 1a4, Geb II 45; Curley I 408.

¹². Margaret D. Wilson, "Superadded Properties: The Limits of Mechanism in Locke"; Michael Ayers, "Mechanism, Superaddition, and the Proof of God's Existence in Locke's *Essay*"; Wilson, "Superadded Properties: A Reply to Ayers"; Ayers, *Locke*, II pp. 144f. Edwin McCann, "Lockean Mechanism", defends something that he thinks stands between these two views, though it is much closer to Wilson (p. 253).

than random.’¹³ Later he writes that ‘In all this no contranatural or supermechanical operations of matter are postulated.’¹⁴ He does not address the obvious objection to this, namely: if particles move purely in accordance with natural mechanical laws, they cannot be ‘directed rather than random;’ so if they are directed rather than random, their movements are in some way contranatural or supermechanical. If there is something wrong with this natural line of thought, Ayers does not help his readers to see it.

You might think: ‘Of course there is something wrong with it. When a bullet is directed by the shooter, obviously nothing contranatural is going on. The supposed link between ‘directed’ and ‘contranatural’ is a fiction.’ That ignores a crucial difference between shooters like you and me and the God believed in by Locke and Leibniz. When a man launches a bullet, the entire transaction - including the movements of his muscles, of parts of the gun, of the molecules of explosive, and of the bullet - belongs to the mechanical, material world. We can and do argue about why some of it counts as directing and some as directed, but there is no controversy, and no room for controversy, about the unified causal status of the total sequence of events. If God directed a particle, on the other hand, the particle’s movement would be an effect whose cause lay outside the mechanical, material realm.

I conclude that divinely ‘directed’ particles must move in some manner that does not perfectly conform to the laws of mechanical physics and are in that sense contranatural and supermechanical. That is what the ‘regulate’ argument requires NTM to imply. The upshot would still be naturally thinking matter, in the sense that its thought would arise naturally from the material happenings in it; but those happenings themselves would involve a non-natural element. I do not say that Locke thought his position through far enough to see all of this.

Whether or not the ‘directed’ movements would be natural, there is the question of *where* Locke should locate them in God’s enterprise of bringing it about that some matter thinks. Ayers supposes the movements to be directed only towards an ‘initial state’ of the thinking material thing. This idea dominates nearly all his brief allusions to God’s work in getting matter to think:

The external cause must be an architect.¹⁵

It may be, for all we know, within the non-miraculous and intelligible potentialities of matter, when organized by a supreme intelligence, to constitute a thinking thing.

[If we suppose] a system of matter with the power of thought . . . [we must] also suppose that that complex, organized body should have been organized by a supreme intelligence.

The judgment that the attribute [‘life, thought, or whatever’] is a perfection is just the judgment that it involves too much remarkable organization to have come into existence by chance.

According to Ayers, then, God’s ‘directing’ is aimed at creating a complex, organized body that can make itself think without outside help. For this to fit into Locke’s argumentative strategy in IV.x, the thesis must be that the required kind of complexity could not come about without thoughtful direction.

I can find no textual support for this. The ‘regulate’ argument itself is silent about what is needed for a highly complex material system to come into existence; it says nothing about the creating of structure, organization, degree of complexity. As for the required further premise -

¹³. Ayers, *Locke*, II p. 170.

¹⁴. *Ibid.*, p. 179.

¹⁵. Ayers, *Locke*, II p. 177; the next three quotations are from p. 169 (twice) and p. 183.

that the needed organization could not come about by chance - that is not only absent from the 'regulate' argument but seems to be something that Locke did not accept. If he did, he would be in a position to assert:

It is not *possible* that a promiscuous jumble of printing letters should *ever* fall into a method and order which should stamp on a paper a coherent discourse, or that a blind fortuitous concourse of atoms, not guided by an understanding agent, should *ever* constitute the bodies of any species of animals.

In fact, he asserted no such thing. The nearest he came to it was to imply a negative answer to the following question (and now I am quoting him):

Whether it be *probable* that a promiscuous jumble of printing letters should *often* fall into a method and order which should stamp on a paper a coherent discourse, or that a blind fortuitous concourse of atoms, not guided by an understanding agent, should *frequently* constitute the bodies of any species of animals. (IV.xx.15, my italics)

This stops doubly short of what would be needed for the premise needed for the 'regulate' argument on Ayers' interpretation of it. Without a guiding mind, Locke writes, it is not *probable* that animals should *frequently* come into existence. 'Frequently' is too weak to support the 'regulate' argument, which concerns a single case; and 'probable' is also too weak for the argument, which Locke offers as showing that God could not *possibly* be made of matter. The strong modal language occurs all through 17, as also in 5 and in IV.iii.6.

L. The creation of matter

In the closing Sections (18 and 19) of the chapter, Locke tackles someone who, granting that God is eternal and immaterial, merely denies that he created matter. He cannot have done so (according to this opponent), because we cannot conceive of matter's being created *ex nihilo*. Locke dismisses this with a flurry of jabs at anyone who draws causal conclusions from premises about what we can conceive. We know from experience that our minds cause our bodies to move, he points out, yet we have no conception of how; so we know that reality can and indeed does outrun our conceptions. 'It is an overvaluing ourselves,' Locke writes near the end of the chapter, 'to conclude all things impossible to be done whose manner of doing exceeds our comprehension.'

He also makes another point. The opponent should agree that he - not (just) his body but the thinking thing that he is - came into existence a few decades earlier. So something came into existence *ex nihilo*. Someone who believes this is not entitled to deny that matter could also come into existence out of nothing.

Why does Locke discuss the creation of matter here? This can probably be answered by scholars who know more than I do about whom he was reading, thinking about, arguing with. Anyway, whatever he originally wanted it for, this discussion served Locke in the second edition of the *Essay* as a peg on which to hang two radical metaphysical theses which we do not find anywhere else in the work. I shall present one in my next section, after first setting the scene; the other will be my topic in section N.

M. Locke's depth

It is easy and usual to see Locke's metaphysical thought as *anchored* in a commitment to concrete, discrete material things whose behavior is explained by their primary qualities. Against

this picture of Locke as a conforming child of his time - a genius on a tether - I contend that he was willing to allow that the best scientific thought of his age might be merely a stage on the way to a fundamental truth of some quite different kind. I shall illustrate this with two facts about his thought that come to the surface in *Essay* IV.x, preceded by one that shows up elsewhere.

(1) Locke knew that the place of primary qualities in his scheme of things was a possibly temporary stop-gap. Recognizing that secondary qualities such as colors are almost epiphenomenal, he rightly banished them from physics and held them to be best understood as merely dispositions to cause certain states in percipients.¹⁶ These dispositions, he held, must supervene upon intrinsic facts about bodies, and he usually took these to concern bodies' primary qualities - the shapes, sizes etc. of their minute parts. But his only ground for stopping there was that the science of his day took him no further; there were no positive grounds for maintaining that the conceptual repertoire of true basic physics must involve shapes, sizes etc. And Locke knew this, for he writes of secondary-quality dispositions of things as 'depending . . . upon the primary qualities of their minute and insensible parts, *or if not upon them upon something yet more remote from our comprehension.*'¹⁷ Locke was famously open-minded about whether physics had reached its end-point, the 'knock, impel' argument being a sad exception to that. Here, however, we find him more radically suspending judgment about whether final physics will involve primary qualities at all.

(2) Now go down a level. The basic truth about the material world could not be a primary-quality one unless there were individual bodies to have the primary qualities. On that topic Locke was conflicted. (i) On the one hand, like Leibniz and others at his time he was hostile to the idea of attractive forces; that left him, as he knew, unable to explain how bodies hang together so that there are pebbles as well as air and water (II.xxiii.23-27). This encouraged the view - which seemed inevitable in any case - that all matter is infinitely divisible, so that any body can be divided into constituent parts which are still smaller bodies. 'Since in any bulk of matter, our thought can never arrive at the utmost divisibility, therefore there is an apparent infinity to us . . . in that' (II.xvii.12). But although we are thus pushed towards the notion of infinite divisibility, we are also pushed away from it, because:

In matter we have no clear ideas of the smallness of parts much beyond the smallest that occur to any of our senses; and therefore when we talk of the divisibility of matter in infinitum, though we have clear ideas of division and divisibility, and have also clear ideas of parts made out of a whole by division; yet we have but very obscure and confused ideas of [the parts of bodies which are] reduced to a smallness much exceeding the perception of any of our senses. (II.xxix.16)

Because he tends to limit what we can coherently think about to what we can imagine pictorially, Locke has a dilemma about infinite divisibility: 'The divisibility in infinitum of any finite extension involv[es] us, whether we grant or deny it, in consequences impossible to be explicated or made in our apprehensions consistent' (II.xxiii.31). This drives him to acknowledge that 'We are at a loss about the divisibility of matter' (IV.xvii.10).

Throughout most of the *Essay* Locke keeps divisibility, and with it the infinity problem, out of sight. He writes often about 'particles' or 'corpuscles' of matter without considering whether

¹⁶. See Jonathan Bennett, *Learning from Six Philosophers*, chapter 25.

¹⁷. *Essay* IV.iii.11; my italics. See also 16.

each of those has still smaller portions of matter as parts and, if so, what makes the parts hang together. In II.xxvii.3 he goes even further, positively keeping infinity at bay by implying that the material world is composed of 'atoms' that can be neither split nor deformed. (I am relying not merely on the word 'atom,' but also on a substantive fact about how Locke proceeds. He wants to explain what it is for a single F to last through time, for various values of F, ending famously with F = person. He starts with F = atom, and deals with the identity through time of an atom without mentioning parts; then he turns to F = mass-of-matter, saying that mass x is mass y if and only if y has exactly the same atomic parts as x. So Locke *first* gets atoms on board in his analytic project, and *then* starts to use the concept of a part. This coherent procedure would be merely incompetent if he thought of 'atoms' as having separable parts.)

Essay IV.x.10 is the only place I know of where Locke goes the other way, retains divisibility and drives through the middle of the infinity problem as though it were not a problem:

Though our general or specific conception of matter makes us speak of it as one thing, yet really all matter is not one individual thing, neither is there any such thing existing as one material being, or one single body that we know or can conceive. And therefore if matter were the eternal first cogitative being, there would not be one eternal infinite cogitative being, but an infinite number of eternal finite cogitative beings, independent one of another, of limited force and distinct thoughts, which could never produce that order, harmony and beauty which are to be found in nature.

This astonishing passage is tucked away in the middle of something else. As I reported in section E, the principal aim of 10 is to show that the initial cause of thought cannot be something incogitative; if it were, Locke assumes, it would be thoughtless matter; and he has argued in the manner of Leibniz's 'mill' argument that thoughtless matter could not cause thought. Now we have him adding that if thought were originally and basically inherent in anything material, it would have to be in the material realm as a whole; it could not be in some one body or in any assemblage of bodies, because basically there are no individual bodies. This rejects not only atomism but also corpuscularianism; it rules out not only unsplittable bodies but even cohesive though perhaps-splittable ones. Presumably Locke means to imply that although there obviously are individual bodies - pins and pebbles, comets and trees - what marks them off and gives them their integrity and unity is so shallow that the concept of an individual body can have no place in basic metaphysics.

I used to think that Locke has contradicted himself here, by denying that there is even one material being and then immediately proceeding to imply that there are infinitely many of them. That was a careless reading. He speaks of 'an infinite number of eternal finite cogitative beings,' but he does not call them 'material' or label them 'bodies.' This is deliberate, I now think. They are not material because if they were they would have extent and thus be divisible and so, according to his thought in 10, not be genuine beings after all. If matter is cogitative, Locke is saying, the thought must be carried by the *ultimate* constituents of matter; they must be infinitely numerous, but they are sizeless infinitesimals and are thus not bodies.

It is fascinating to see Locke arriving at something comparable with Leibniz's view that the ultimate reality in matter consists in 'beings' which are sizeless and thus not themselves material. I forgive myself for not having seen this, because Leibniz missed it too. In the *New Essays* he quotes that whole passage from 10 but does not remark on it. There are of course differences between the two at this point: for Leibniz, matter relates to these ultimate beings as appearance to reality; for Locke, it relates as a whole to its parts.

Locke's procedure here remains open to criticism, however. It would have been better if he had inferred from the divisibility of all matter that the ultimate story does not have countable things or 'beings' in it, but only unpluralizable *stuff*.¹⁸

Anyway, we here find Locke banishing sized, shaped bodies from his fundamental ontology. This belongs to something added in the second edition, and he did not rewrite the *Essay* in the light of it. Still, it gives us clear evidence that he carried his thoughts that far, envisaging and even accepting an ontology which implies that corpuscularianism is a superficial affair.

(3) In 18 Locke points to a way of digging deeper still, reaching an ontological ground floor at which there is not even matter. This deserves a section to itself.

N. Locke and Spinoza on matter and space

Locke concludes in 18 that matter is no harder to create than spirit is, this being said against those who hold that spirits have come into existence while matter must be eternal because even God could not create it. In that spirit he writes that the two kinds of creation require 'equal power' and are 'equally beyond our comprehension.' In the second edition of the *Essay*, however, Locke drops this even-handedness in favour of the undefended suggestion that matter may actually be easier to create than mind is. He does this in the 'enigmatic passage' which so tantalized Leibniz:

Nay, possibly, if we would emancipate ourselves from vulgar notions, and raise our thoughts as far as they would reach to a closer contemplation of things, we might be able to aim at some dim and seeming conception how matter might at first be made and begin to exist by the power of that eternal first being: But to give beginning and being to a spirit would be found a more inconceivable effect of omnipotent power. But this being what would perhaps lead us too far from the notions on which the philosophy now in the world is built, it would not be pardonable to deviate so far from them; or to inquire, so far as grammar itself would authorize, if the common settled opinion opposes it; especially in this place, where the received doctrine serves well enough to our present purpose.

Many years later, Pierre Coste added a footnote to this passage in the second edition of his French translation of the *Essay*. Sir Isaac Newton had smilingly told him, he reported, that Locke was alluding to a suggestion of Newton's that God might have created matter by causing some regions of space to be qualitatively unlike others. Newton developed this idea in some detail in a paper that was first published three centuries later.¹⁹ It amounts to the proposal that the existence of a body is really what we might call a 'thickening' of a region of space, and that the movement of a body is a progressive alteration in which regions are 'thick' and which are not. Compare the movement of a rumour through a crowd, of a freeze across a countryside, of an economic depression around the world. Locke evidently thinks that if that is what the existence of bodies amounts to, then matter's coming into existence is merely space's altering in certain ways, and not the creation *ex nihilo* of a substance, which some have thought to exceed the powers even of God. As Leibniz shrewdly put it: 'I suspect that [Locke] conceives of the production of matter in

¹⁸. Readers who need help with the profound difference between things and stuff could start by consulting the twenty papers about it in Francis Jeffrey Pelletier (ed), *Mass Terms: Some Philosophical Problems*.

¹⁹. Isaac Newton, *De Gravitatione et aequipondio fluidorum*. For further references, a detailed history, and philosophical discussion, see Jonathan Bennett and Peter Remnant, "How Matter Might at First be Made." A fuller exposition of this metaphysics of matter is in Jonathan Bennett, *A Study of Spinoza's Ethics*, chapter 4.

the manner of the production of accidents; there is not thought to be any problem about their being derived from nothing' (A VI vi 442; NE 442).

This metaphysic of matter has occurred to numerous philosophers down the centuries. Plato was one, as Leibniz remarked when offering his correct guess about what Locke was hinting at. Spinoza was another: he expressed it by saying that there is only one extended substance, and that finite bodies are modes of it, qualities that it is locally and temporarily has. In a fully basic account of the material world, therefore, no substantives will refer to bodies; there will indeed be just one noun (*Deus*) and synonyms of it (e.g. *Natura*), referring to Space, and all the facts about bodies will be handled as predications on that.

Although Locke did not go deeply into this metaphysic, and was presumably not influenced in it by Spinoza, he does seem to have pursued it as far as the point about nouns and adjectives. That is how I explain his allusion to the project of 'inquir[ing], so far as grammar itself would authorize, if the common settled opinion opposes it.' Without fully understanding this, I think it shows Locke to be aware that if we try to examine how this Plato-Spinoza-Newton metaphysic of matter relates to common beliefs, we shall have to surmount obstacles placed in our way by 'grammar itself,' because most of the work done by the plain person's nouns will in this other scheme be handled predicatively - by adjectives, verbs and adverbs.

* * * * *

Margaret Wilson, during her final illness, asked me to send her a draft of this paper and planned to offer comments. If only she had lived to give them!