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DISCUSSION

ON BEING IN THE SAME PLACE AT THE SAME TIME

(WITH ONE REMARK ABOUT CATEGORIES AND MATERIALISM)

IT IS a truism frequently called in evidence and confidently relied upon in philosophy that two things cannot be in the same place at the same time. Plainly this principle, which I shall call *S*, ought really to say that two things cannot *completely* occupy exactly the same place or exactly the same volume (or exactly the same subvolumes within exactly the same volume) for exactly the same period of time. No man is the same as his forearm. But there is a volume such that a man can wholly occupy it and such that both man and forearm are in it at exactly the same time. But this does not count.

More interestingly, think of a sponge and the water that makes it a wet sponge. That does not count against principle *S* either. Here we can press into service the chemical theory of molecules to distinguish subvolumes or sub-subvolumes of the total volume occupied by the sponge from those occupied by the water. But it is difficult to believe that this determination of ours to allow nothing to count against *S* gets us to the bottom of the matter. At very least, it would help to know what was the a priori or metaphysical compulsion to think in our present way about these questions. What if in defiance of fact and the actual laws of chemistry and physics the water and the sponge were so utterly mixed up that spatial distinction seemed impossible, not only at the molecular level but also at the atomic and at the subatomic? And what if you had only to squeeze to get water and sponge apart again? Surely they would be the same sponge and the same (consignment of) water afterward? And would they not have been in exactly the same place at the same time? I think I know how to resolve one, but only one, of the difficult questions which arise out of all this. For one part of the a priori basis for principle *S* is not too difficult to uncover. But *S* is still not correctly formulated.

A certain tree *T* stands (leafless, suppose) at a certain spot at time t_1 and occupies a certain volume v_1 at this time t_1 . All and only v_1 is also occupied by the aggregate *W* of the cellulose molecules which compose the tree. Indeed it is their occupation of v_1 which precisely determines that the volume which the tree occupies is volume v_1 . The tree *T* and the cellulose molecules *W* are thus in exactly the same place

at exactly the same time. Are they identical? Now $T = W$ only if whatever is true of T is true of W (Leibniz' Law). It follows, I think, that $T = W$ only if T and W have exactly the same conditions of persistence and survival through change. But self-evidently they do not.

Suppose T is chopped down and then dismembered and cut up in such a way that no cellulose molecule is damaged. It seems that W then survives. And there is just as much wood in the world as there was before. But T , the tree, cannot survive such treatment. Conversely, suppose the tree is pruned and the clippings are burned, or that it undergoes an organic change which destroys some of the original wood cells. Then the tree T survives but W , the aggregate defined as the aggregate of such and such particular cellulose molecules, does not survive. Of course, you could define another notion of aggregate and give detailed conditions for suitable co-option and expulsion of members of such an aggregate. Perhaps you could get these conditions for gradual organic variation of membership exactly right and produce an entity W' with exactly the same criterion of individuation as T . But that would be a boring trick. You would have defined a *tree*—and not wholly in terms of molecules or wood cells. You would only have contrived an identity connection between something in the category of stuff and something in the category of substance by introducing the concept of something organized and substance-like—that is, something foreign to the category—into the category of stuff.¹

None of this is to say that T is something *over and above* W . It precisely is not. The “is” of material constitution is not the “is” of identity. The tree is *made of* (or *constituted of* or *consists of*) W , but it is not identical with W . And “ A is something over and above B ” denies “ A is (wholly composed of) B ” or “ A is merely (or merely consists of) B .” If A is

¹ There is much more to be said both about identity and about mereological treatments of the notion of aggregate. I have tried to say a little of it in *Identity and Spatio-Temporal Continuity* (Oxford, 1967), pp. 11-13, 67-68, 72.

The argument seems to apply equally to artifacts. Mrs. Jones at t_2 unpicks her husband's old sweater and winds the wool into a ball. Equating matter and object, we shall have to say the wool is the sweater. But suppose she then at t_3 crochets a pair of bed-socks with the wool. Then by transitivity the sweater is the pair of bed-socks. But the bed-socks were crocheted at t_3 out of a ball of wool which was before t_2 a sweater, and the sweater was not at t_3 crocheted out of a ball of wool which was before t_2 a sweater. We must refuse to equate matter and object, and refuse to think of this as a paradoxical refusal. It is not. Crocheting, like knitting or weaving, is a way of *making* bed-socks. The material must pre-exist the making, and survive it. But *what* is made cannot pre-exist its fabrication.

something over and above B , then of course $A \neq B$, but the proper point of saying "over and above" is to make the further denial that B fully *exhausts* the matter of A . But W does fully exhaust T and so T is not something over and above W .

If it is a materialistic thesis that $T = W$, then my denial that $T = W$ is a form of denial of materialism. It is interesting how very uninteresting an obstacle these Leibnizian difficulties—real though they are—put in the way of the reduction of botany and all its primitive terms to organic chemistry or to physics. (If it does not follow from $T \neq W$ that trees are something over and above their matter, how much the less can it follow that they are immanent or transcendent or supervenient or immaterial beings. This is obviously absurd for trees. A Leibnizian disproof of strict identity could never be enough to show something so intriguing or obscure.) I should expect there to be equally valid, and from the point of view of ontology almost equally unexciting, difficulties in the reduction of persons to flesh and bones,² in psychophysical event-materialism, and in the materialisms which one might formulate in other categories (such as the Aristotelian categories *property* and *state* or the categories *situation* and *fact*). *Over and above* is one question, *identity* is another. But of course the only stuff there is is stuff.

I shall say no more about T and W here, except to remark that what I have tried to show by this simple example is not wholly different from a philosophical thesis which it has become a commonplace of philosophy to defend in terms of different *logical types* to which such things as trees and the aggregates they "are" (= consist of) belong. I prefer to put the matter my way because it makes a smaller claim, because it leaves room for a clear statement in the object language of a perfectly intelligible connection between trees and cellulose molecules, and because of the high degree of intelligibility enjoyed by this Leibnizian principle for predicative (as opposed to constitutive) "is": If and only if A is an f (or is ϕ) then A is identical with an f (or with one of the ϕ things); and if and only if A is one of the f 's (or ϕ things) then it must share all its properties with that f (or ϕ thing).³ This does not exhaust the content of standard doctrines of ranges of significance (that is, those which derive from Russell's simple or ramified Theory of Types⁴). They say much more than this about what you can and

² See *Identity*, p. 57.

³ See *ibid.*, pp. 10-11, 61.

⁴ See Russell's *Lectures on Logical Atomism*, VII (reprinted in *Logic and Knowledge*, ed. by R. Marsh [London, 1956], pp. 254 ff.), and G. Ryle, "Categories," *Proceedings of the Aristotelian Society* (1937-1938).

cannot say about *A*. But my own opinion is that the residue remains obscure. Let me now, however, revert to our principle *S*.

The tree and its molecules and wood cells do not disprove what was originally intended by principle *S*. What has been shown is only that we must reformulate *S* to read:

*S**: No two things *of the same kind* (that is, no two things which satisfy the same sortal or substance concept) can occupy exactly the same volume at exactly the same time.

This, I think, is a sort of necessary truth. It has at least three sources of support.

(i) Space can be mapped only by reference to its occupants, and spatial facts are conceptually dependent on the existence of facts about particulars and the identities of particulars. If space is to be mapped by reference to persisting particulars, then the nonidentity of particulars *A* and *B*, both of kind *f*, must be sufficient to establish that the place of *A* at $t_1 \neq$ the place of *B* at t_1 .

(ii) A criterion of identity for material objects will have to be something like this:

I_m: *A* is identical with *B* if there is some substance concept *f* such that *A* coincides with *B* under *f* (where *f* is a substance concept under which an object can be traced, individuated and distinguished from other *f*'s, and where *coincides under f* satisfactorily defines an equivalence relation all of whose members $\langle x, y \rangle$ also satisfy the Leibnizian schema $Fx \equiv Fy$).⁵

Now *I_m* logically implies *S**. So if *I_m* is an a priori truth, then so is *S**. Finding that *A* and *B* coincide under *f* settles the question whether $A = B$. There is nothing more to decide.

(iii) There is a conceptual basis for an even stronger truth than *S**, namely:

⁵ See "Individuation of Places and Things" (symposium with M. J. Woods), *Aristotelian Society supp. vol.* XXXVII (1963), where a certain difficulty of circularity is discussed. Also *Identity*, pp. 34-36, 72.

Leibniz' Law is only a criterion of difference, and in any case it can be used to show $A \neq B$ only where we already know that *A* is not ϕ for some ϕ which we independently know *B* is.

S^{**} : A and a proper part or constituent B of a third thing C , where $A \neq C$ and $A \neq B$, and where no part of constituent of A is any part or constituent of B or of C , cannot completely occupy exactly the same volume at exactly the same time.

The basis for this truth elucidates its import. Suppose A and B were distinct and in the same place at the same time. Then they could not have been distinguished by place. But then they would have had to be distinguished by their properties. But no volume or area of space can be qualified simultaneously by distinct predicates in any range (color, shape, texture, and so forth).

I think (i), (ii), and (iii) may come near to accounting for most of the conceptual basis for the truth that material things have to *compete for room* in the world, and that they must tend to *displace* one another, although I should not claim that they clear up all the questions which can arise about the water and the sponge, or about scientifically more realistic examples concerning chemical compounds and alloys.

A final test for the soundness of S^* or, if you wish, for Leibniz' Law, is provided by a puzzle contrived by Geach out of a discussion in William of Sherwood. A cat called Tibbles loses his tail at time t_2 . But before t_2 somebody had picked out, identified, and distinguished from Tibbles a different and rather peculiar animate entity—namely, Tibbles *minus* Tibbles' tail. Let us suppose that he decided to call this entity "Tib." Suppose Tibbles was on the mat at time t_1 . Then both Tib and Tibbles were on the mat at t_1 . This does not violate S^* or S^{**} . But consider the position from t_3 onward when, something the worse for wear, the cat is sitting on the mat without a tail. Is there one cat or are there two cats there? Tib is certainly sitting there. In a way nothing happened to *him* at all. But so is Tibbles. For Tibbles lost his tail, survived this experience, and then at t_3 was sitting on the mat. And we agreed that Tib \neq Tibbles. We can uphold the transitivity of identity, it seems, only if we stick by that decision at t_3 and allow that at t_3 there are two cats on the mat in exactly the same place at exactly the same time. But my adherence to S^* obliges me to reject this. So I am obliged to find something independently wrong with the way in which the puzzle was set up. It was set up in such a way that before t_2 Tibbles had a tail as a part and Tib allegedly did *not* have a tail as a part. If one dislikes this feature (as I do), then one has to ask, "Can one identify and name a part of a cat, insist one is naming just that, and insist that what one is naming is a *cat*?" This is my argument against the supposition that one can: Does Tib have a tail or not? I mean the

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question in the ordinary sense of “have,” not in any peculiar sense “have as a part.” For in a way it is precisely the propriety of some other concept of *having as a part* which is in question. Surely Tib adjoins and is connected to a tail in the standard way in which cats who have tails are connected with their tails. There is no peculiarity in this case. Otherwise Tibbles himself might not have a tail. Surely any animal which has a tail loses a member or part of itself if its tail is cut off. But then there was no such cat as the cat who at t_1 has no tail as a part of himself. Certainly there was a cat-part which anybody could call “Tib” if they wished. But one cannot define into existence a *cat* called Tib who had no tail as part of himself at t_1 if there was no such cat at t_1 . If someone thought he could, then one might ask him (before the cutting at t_2), “Is this Tib of yours the same cat as Tibbles or is he a different cat?”⁶

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⁶ Professor Geach kindly permitted me to allude to his formulation of this puzzle but he has no responsibility for the purpose to which it is put here, and I understand that he originally devised it for the different purpose of posing a challenge to Leibniz’ Law.