

Co-location and separability

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Abstract: I propose that it is a conceptual truth about material objects that if two of them are truly distinct, it must be possible for them to be in different places. If this is so, those who maintain that sometimes – as with a statue and a piece of clay – two distinct objects are located in the same place cannot be right, since the objects they allege are co-located fail to satisfy this condition. I consider the ways in which a pluralist might try to block the conclusion and find them wanting.

Keywords: pluralism; material object; co-location.

Not a few philosophers have come to believe that it is not only possible but, indeed, common, for two things to occupy the same place at the same time. Put more precisely, the thesis, sometimes called pluralism, is that there are actual cases where “the whole of one object wholly occupies the whole of the space wholly occupied by the other”.¹ They have convinced themselves of it – an affront others, including Locke,² would say to common sense – in part by reflecting on stories such as Alan Gibbard’s about Lump and Goliath.³ According to that story, Lump (a piece of clay) and Goliath (a statue) come into being by a sculptor’s sticking together two half-Goliaths (and thus two pieces of clay) he had formed separately. Even if Lump and Goliath also go out of existence at the same time – say, by shattering on being dropped – and we thus have to agree that during their entire career, they were in exactly the same place, they still cannot be said to be the same thing, since it seems that there are possible changes that only one of them would survive. For example, it is (allegedly)

¹ As Burke – himself no friend of the view – puts it (Rea 1997: 237). Rea counts Wiggins, Doepke, Johnston, Sosa and Thompson (all in Rea 1997) as championing it. But see below.

² In a famous passage: “never finding, nor conceiving it possible, that two things of the same kind should exist in the same place at the same time, we rightly conclude, that whatever exists anywhere at any time, excludes all of the same kind, and is there itself alone” (*Essay*, Book II, Ch xxvii: 1).

³ Gibbard himself is no pluralist. He draws a different moral from the story: Goliath and Lump are identical, but only contingently so. I shall not discuss his view here.

possible for Lump1, but not for Goliath, to survive being squeezed into a ball.⁴ If Leibniz' Law applies to modal properties, this is enough to establish that Goliath and Lump1 are distinct.

Of course, if one finds Locke's principle self-evident, one will think that there must be something wrong with the argument that seems to lead to pluralism. But the pluralist would be within his rights to suggest that to appeal to Locke's principle is to beg the question against him. His opponent would be on stronger ground if he could find a compelling reason for thinking that pluralism cannot be true that does not appeal to Locke's principle. I argue in what follows that there is such a reason. If I am right, we have to accept one of the following: either the arguments for pluralism, plausible as they may seem, are nevertheless flawed or we have a genuine paradox on our hands.

A preliminary clarification: I take it that for the pluralist conclusion to be non-trivial, we must take 'thing' to mean 'material object'. There is a neutral sense of 'thing' in which lots of things that are not such objects are things: properties (being black is one thing, being round is another), relations, and thoughts, and so on. The question of co-location is sometimes discussed in terms of "entities", so that "to believe in the possibility of coincident entities is not necessarily to believe that there can be two distinct material objects in the same place at the same time" (Rea 1997: xxix). One can deny, as Fine does, that a thing is identical with its matter.⁵ Or one can deny, as does Wiggins, that two material objects of the same kind can be co-located but accept that two things of different kinds (say, a material object and an aggregate of the parts composing it) can. None of these positions is a pluralist one in the intended sense. While a thing may be thought to be a combination of two things: matter and form, neither the form of a thing nor the matter of which it is made is a material object. Goliath's form is not a material entity in any sense, whereas the clay of which it is made, while material, is not a thing but a portion (in Gibbard's sense) of stuff.⁶ Goliath and Lump1 (the *piece* of clay)

⁴ It goes the other way, too. Goliath could survive losing an arm – as did the Venus de Milo – but Lump1 could not. Gibbard and pluralists both assume that statues can tolerate less distortion than pieces of whatever material they are made of. Questioning that assumption (as I am inclined to do) is not necessary for present purposes (Cp. Elder 1998).

⁵ Fine does not distinguish between the clay Goliath is made of and the piece of clay, Lump1. If we do, as I think we should, we can agree that while Goliath's clay is –obviously –where Goliath is, Goliath is not identical with its clay. But we need not agree that he is distinct from Lump1. The matter of a thing is not another thing.

⁶ The *clay* Goliath is made of, not the *piece* of clay. If Lump1 is a thing, which it had better be to be identical with *or* to be distinct from Goliath, it cannot be what the latter is made of. Things are not made of things but of (a kind of) stuff. Alas, the literature is replete with examples of this confusion. Gibbard speaks of "...a clay statue is identical with the piece of clay of which it is made" (Rea 1997: 93

are, by contrast, things of the same kind, material objects – *bodies*, in the vernacular.

I suggest that instead of asking, as is usual, whether it is possible for two such objects to be in the same place at the same time, we ask whether it is possible for them to be two things if ‘they’ cannot be in different places. I propose that things (in the sense specified) are subject to a principle that may be called the principle of separability:

(PS):

$$(x) (y) ((Bx \text{ and } By \text{ and } x \neq y) \rightarrow \text{Poss} ((H(x) \ \& \ T(y)) \vee (H(y) \ \& \ T(x))))$$

(where ‘B’=‘is a body’ and ‘h’ and ‘t’ are non-overlapping regions of space)⁷

I do not have an argument for (PS) – I think that it is self-evident. If I am right in this and also in thinking that Goliath and Lump1 (and Goliath and its clay) do not satisfy the principle, we have a reason for thinking that they cannot be distinct, a reason that is independent of Locke’s principle. So, for present purposes, we can be agnostic about *that* principle; indeed, for all the difference it makes to the present argument, we may even suppose it false.

There are a number of ways a pluralist could respond. One would be to question the status of (PS). Perhaps it is not self-evident. Among the many strange and wonderful things we learn from modern physics – so I am told – is that two bosons can be in exactly the same place. Still, even if that is so, pluralism as understood here is clearly a claim about ordinary, everyday, objects, Austin’s “middle-sized dry goods” (1968: 8). (PS) should be understood as claiming only that two of *those* must be separable. Another thing the pluralist could say is that in a contest between an appeal to self-evidence and an argument such as his, the latter packs more dialectical punch. However, *if (PS) is self-evident*, and the supposedly distinct but co-located things cannot be shown to satisfy it, we should conclude that in spite of its plausibility, there must be *something* wrong with the pluralist’s argument. And, of course, the pluralist could try to produce a counter-example to (PS), one in which we have two things that are unquestionably distinct yet cannot occupy different places. Pointing to Goli-

and 96). Yablo has “In the usual example, there is a bust of Aristotle, and it is formed of a certain *hunk* of wax” (Yablo 1987 249), Johnston, “the *piece* of clay (that) constitute(s) the statue” (Rea 1997: 44) and “the *piece* of clay makes up the statue” (Rea 1997: 45). (He also equates “the piece of matter that ... constitute(s)” the object and “the matter which constitutes” it (Rea 1997: 48)). Thomasson speaks of “statues [...and] the *lumps* of clay of which they are made” (Thomasson 2007: 73), Sosa of “a snowball ... constituted by a certain *piece* of snow” (Rea 1997: 87). (All italics mine.) Elder is a rare exception.

⁷ A caveat: Among the many strange and wonderful things we learn from modern physics – so I am told – is that two bosons can be in exactly the same place. Even if that is so, pluralism as understood here is clearly a claim about ordinary, everyday, objects, Austin’s “middle-sized dry goods”) (PS) claims that two of *those* must be separable.

ath and Lumppl would obviously not do: just as the pluralist can view an appeal to Locke's principle to rule out their being two things as question-begging, so a defender of (*PS*) can object to assuming that they are to show that his principle is false. I cannot imagine a non-question-begging counter-example. The other, perhaps more promising, tack for the pluralist would be to try to show that Goliath and Lumppl (or Goliath and its clay) *do* satisfy (*PS*).

Let us consider some ways in which this might be thought to be possible.

1. *Part replacement*

Suppose we think that a ship whose planks have been replaced while in service continues to be the same ship. Then perhaps the pluralist can say that there are indeed two things co-located before the repairs begin – the ship and the planks composing it. The fact that the former survives the repairs shows that it is, and was, distinct from the latter, while the fact that ship and planks are later in different places shows that they satisfy (*PS*).⁸ In a similar way, it may be thought, we can satisfy (*PS*) in the case of the clay statue by removing bits of the clay, one by one, replacing each removed bit by a similarly shaped bit of clay as we go, and putting the removed bits together (perhaps in the same shape as before). If we accept that the statue now composed of new bits of clay is the original statue and thus the one allegedly formerly co-located with the piece of clay composed of the bits of clay later removed, we can say that we now have the original statue in one place and what is (arguably) the original piece of clay in another (now co-located with a new statue). While this may sound plausible on first hearing, we must remember that the (putatively) distinct material objects that must satisfy *PS* are the (allegedly) actually co-located ones. However, even though the statue composed of the new bits of clay is a material object, it does not follow that it is the same material object that is supposed to have been co-located with the statue before the business began. If, as is plausible to say, the lump of clay composed of the removed bits of clay is the same material object as one of the formerly supposedly co-located ones because, and only because, it is composed of the same bits of clay, why would we not say the same thing of the statue after it has been squeezed? In spite of having a different shape, it is made of just the same clay as before.⁹ Call the material object

⁸ Note, though, the difficulty in finding a way to refer to the supposed object supposedly co-located with the ship: 'set of planks' will not do, as sets are abstract object, not material ones, and plain 'planks,' as I have it, refers to many objects, not one.

⁹ It is assumed by both Gibbard and pluralists that after the squeezing we no longer have Goliath. This is not obvious, as a moment's reflection on abstract sculpture will show. There is no reason to

that is the statue before the business begins A and the (putatively distinct) material object that is the lump of clay B. Call the material object that is the statue composed of the new bits of clay C and the one composed of the old bits D. The relational (historical, etc.) properties of D differ from those of B. If we say that in spite of this ‘B’ and ‘D’ name the same material object, we are treating sameness of composing parts as sufficient for identity. More importantly, we are implying that it is also necessary: if D were composed of bits of clay other than those removed from B, we would not say that it *was* B. To be fair, we should treat A and C in the same way. At the end of the business, if we say that C is the original statue, we cannot say that it is the same material object as the original lump of clay. The alternative is to say that D is the original statue because it is composed of the same bits.¹⁰ But that is no help to the pluralist. If we say the first, we are allowing that different material objects can be the same statue at different times. If the second, we are ruling this out. In neither case have we separated the material object the statue *was* from the material object the lump of clay was at the same time. Thus whichever *statue* one thinks is the original statue, *PS* is not satisfied. Either way, the pluralist loses.

2. *Two into one*

Perhaps an ingenious variant of the Ship of Theseus puzzle, due to Christopher Hughes, may save the day for the pluralist. In Hughes’ story, we start out with two ships, the original un-repaired Ship of Theseus, now gathering dust in a museum and a ship just like it but not known to be so by its owner, Stathis, now sailing the Aegean. As the latter needs repairs, these are effected by using the appropriate planks from the former.¹¹

Hughes presents his story as a challenge to Locke’s principle. His argument is that if we accept two *prima facie* plausible principles, we have to agree that after the repairs are completed, there are two ships co-located and sailing. The two principles are 1) that a ship can survive total plank-replacement and 2) that a ship can survive disassembly and re-assembly.¹² I have already said that I need take no position here on Locke’s principle, since my argument does not

suppose that a statue of Goliath must be Goliath-shaped. As is well known, resemblance is neither necessary nor sufficient for representation.

¹⁰ (I am ignoring the “neither C or D is the original statue” option.)

¹¹ It is not clear to me why Hughes adds that this is done without Stathis’ knowledge. Nothing seems to turn on this.

¹² The former seems plausible when we adopt one of the perspectives (“kind fixation”) of what Jubien calls The Great Divide, the latter, when we adopt the other (“object fixation”).

rely on it. But Hughes' story may also be seen as a challenge to the argument against pluralism based on (*PS*). It may be thought that at the end of the story there are still two ships and that they do satisfy (*PS*), since there was a time when they occupied different places. Once the thing (the very thing) that is the Ship of Theseus, now sailing the Aegean, was in the museum. At the same time, the thing (the very thing) that is the Ship of Stathis was sailing the Aegean. This remains true even if the two ships are now in the same place.

Note that accepting this conclusion is to make a stronger claim than the usual pluralist one. The latter is that two things of different kinds – a ship and a certain aggregate of planks (or a statue and a certain lump of clay) – can be in the same place at the same time. What Hughes' story purports to show is that two things of the same kind can.¹³ One worry about the stronger claim is that the usual pluralist account of the relation between the co-located things, namely, that one of them constitutes the other, is not available. There is no sense in which one of Hughes' two ships could be said to constitute the other.

Still, it may be thought that Hughes' story yields a counter-example to (*PS*) and thus to Locke's principle. However, the idea behind (*PS*) was to require that the two supposedly co-located things should be *separable*, that is to say, that it should be possible to separate them, if they are now co-located, as Hughes claims the two ships are. That they have been in different places is not enough to show that they can come to be in different places. We can re-formulate (*PS*) to make this explicit by tensing it:

(*PS*_t):

$$(x) (y) ((Bx \text{ and } By \text{ and } x \neq y) \rightarrow \text{Poss} ((H(x)_t \ \& \ T(y)_t) \vee (H(y)_t \ \& \ T(x)_t)))$$

(where '_t' is a time subsequent to the time *x* and *y* are said to be distinct but co-located)

(*PS*_t) is not satisfied by the fact – if indeed it is one – that it is possible for two things that were once in different places to come to occupy the same place. If we accept Hughes' two principles, we can agree that at the end of Hughes' story we still have both ships. We need not: we can also say that while once we had two things we now have only one.

The two principles on which Hughes relies to get his conclusion – that “a ship will survive total (gradual, structure-preserving plank-replacement” and that “a ship will survive the disassembly and subsequent reassembly of its planks” (29) – concerned the persistence conditions of ships, not of material objects. Though ships are, of course, material objects, that does not mean that the principles

¹³ For the classic discussion of the distinction, see Wiggins 1968.

apply to them *qua* material object.¹⁴ Accordingly, we can say that at the end of Hughes's story we have one material object that counts as both the ship of Theus and as the ship of Stathis. There is no mystery in their making up one material object that counts as two different things, in the familiar everyday sense in which one material object counts as both the Palace of Westminster and the Houses of Parliament. We can say that the same building instantiates two different kinds, kinds that a succession of different material objects can instantiate over time, as that building's history so vividly illustrates.¹⁵

3. *Multiple realizability*

The last way I can think of trying to argue that Goliath and Lumpl (or the ship and its planks) satisfy *PSt* is by appeal to modal facts such as the (alleged) one that Goliath might have been made of different clay. If it had been, there would have been a different piece of clay co-located with it. Call that piece Lumpl*. Then Lumpl – the piece of clay actually co-located with Goliath – would be in one place – most likely, not Goliath-shaped – and Goliath – now co-located with Lumpl* – in another. But this obviously will not do. First, in this situation, Lumpl would never have been co-located with Goliath. Second, it is not at all clear that Lumpl*, the statue made of different clay, would have been *Goliath*. It would no doubt have been *a* statue of Goliath. But would it have been this statue, the one dubbed 'Goliath' in Gibbard's story? Most would say not, as it is essential to *that* statue that it be made of the clay of which it is actually made.¹⁶ We can, of course, treat statues as abstract objects, multiply realizable. However, even if we agreed that that was the right way to think

¹⁴ On this point, see Jubien's discussion of what he calls object fixation.

¹⁵ In fact, I need not argue that at the end of Hughes' story we have one thing rather than two. All I need is that saying so is an alternative that is available to the monist. But if an argument for preferring that alternative is needed, there is one readily to hand: do not say something weird unless you have no alternative, and you do have one here. Furthermore, given that by then we have only half the number of serviceable planks that were needed to make up the two ships, would it not be something of a miracle if they still sufficed to make them up? Not, of course, if the two ships were in the same place. But, then, that is just what is in dispute.

¹⁶ Elder demurs. If he is right in doing so, and it is not an essential property of an artifact that it be made of the stuff (or even of the kind of stuff) of which is actually made, Goliath (the actual statue so called) could have been made from different stuff. Then, if it had been, it and Lumpl would indeed be in different places – in the unlikely event, that is, that the latter existed. (Unlikely, but not impossible. Since being Goliath-shaped is not an essential property of Lumpl, it need not have come into existence as Gibbard asks us to imagine it actually did.) I need not take sides, however: whatever one thinks of Elder's view, it cannot underwrite the claim that Goliath and Lumpl satisfy (*PSt*), which requires the putatively actually co-located objects to be separable.

of statues, that would not help the pluralist. The two things he claims are co-located are the concrete realizers, not the one abstract object they realize, and the realizers must both be material objects. It is these that have to satisfy (*PS_t*).

If (*PS_t*) is true and Goliath and Lump_l fail to satisfy it, Goliath and Lump_l cannot be two co-located things (in the relevant sense). I assume that the argument generalizes, and it cannot be said that it begs the question in favour of Locke's principle, as it makes no appeal to it. If it is sound, however, it does vindicate it.

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