

# Is matter necessary for the existence of space and time?

## Discuss with reference to two or more thinkers.

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### 1 Thesis

- (F) (P1) Matter is the entity in which a relational space necessarily depends on for its existence.
  - (P2) Space is (not) a relational entity and its existence metaphysically does (does not) depend on another entity.
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- (C) Matter is (not) necessary for the existence of space.

### 2 Premise 1

I shall argue that if space is a relational entity, and not a substantival one, then space necessarily depends on matter for its existence. That is to say, a system of material bodies with spatial relation, or “successions of situation”, is sufficient and necessary in defining space as a relational entity.

Before starting, I would like to assume the naive substantial distinction between the physical and the mental. The reason being if the latter collapses into the former, then my premise is true by definition. As a caveat, I shall not attempt here to demonstrate why the former cannot collapse into the latter, but I can claim such a view ultimately defeats the point of answering this question.

First, if space, as abstracted from everything, is a relational entity, then the propositional properties derived from a set of sentences describing a system of bodies in space would be relational properties. If “I am next to the computer” is such a system of bodies, then “being next to” is the relational property derived from the system. Now, if I remove the subject and object particles from the sentence, and replace them with  $X$  and  $Y$  respectively, then we have the sentence “ $X$  is next to  $Y$ ”. If I attempt to substitute  $X$  and  $Y$  with something, then I *prima facie* do so with physical objects—those comprises of matter. I claim that such an action is ostensible proof that only objects of matter can substitute  $X$  or  $Y$  in this sentence. While such a claim appear terse, consider the opposing case using mental images. If I now sit in park and think of an image of myself being next to my computer, then while I can utter the sentence “I am next to the computer”, such a sentence will make no sense unless I clarify that “the concept of myself is next to the concept of a computer”. But even then, such a sentence is meaningless. If two concepts

can be said to be next to one another, then they can also be said to be on top, under, in front, etc., without any means to differentiate between them—they are mere utterances. Therefore, while it might be painfully trivial, if spatial relations can be ascribed to both physical or mental bodies, only the first will have any worthwhile propositional content. This proves my first premise.

### **3 Premise 2**

I shall now argue that space is not a substantival entity. By “substantival”, I mean that which is a substance, or in other words, that which exists on its own. Being substantival necessarily entails that matter is independent from space, by definition. If space is not substantival, then it is relational (I will not involve super-substanvialism in my discussion as this involves showing matter is not a substance).

### **4 Conclusion**