Assessment: the Bomber's Paradox

The Bomber's Paradox

Paradox Grade: 6

I have a preferred response to the Bomber's Paradox, but I should concede from the start that it is somewhat unintuitive. In fact, that is part of the reason I give the Bomber's Paradox a high-ish paradoxicality grade. I think it teaches us about a way in which our intuitions go awry.

My response starts with the observation the argument involved in the Bomber's Paradox is, in fact, valid. I believe that the reasoning in the preceding page is correct, and that there is no way of getting around that fact.

It follows that it is impossible for there to be a sequence of bombs set up as the case describes. It seems to me, moreover, that it is not just medical or physical impossibility. I think the relevant setup entails an absurdity, and is therefore *logically* impossible.

There is no denying that there is something disconcerting about this claim.

One way to bring this out is to imagine an infinite being, who attempts to set up the relevant configuration of bombs. If the setup is logically impossible, something will go wrong. But what?

I'm inclined to think that this question deserves a flat-footed answer.

Consider an analogy. Suppose that our infinite being tries to bring about a more straightforward absurdity. Perhaps she wishes to build objects A, B and C such that:

$$\text{Mass}\,(A) < \text{Mass}\,(B) < \text{Mass}\,(C) < \text{Mass}\,(A)$$

We know that something will go wrong, and that she won't succeed. But what? The answer is not determined by the story so far, but note that it could turn out to be something rather mundane. Perhaps she creates objects with masses of $1kg$, $2kg$ and $3kg$, respectively, and thereby fails to conform to the required setup. Or perhaps she discovers the futility of the project and loses heart.

I claim that the reason our infinite being fails to put together the relevant configuration of bombs could turn out to be similarly mundane. Perhaps she messes up the timers, and thereby fails to conform the paradoxical setup. Or perhaps she discovers the futility of the project and looses heart.

To my mind, at least, this feels initially unsatisfying. But I think this is because I am subject to a certain kind of mistake.

When I consider case of the three objects I get a strong feeling that the constraints of the problem are at odds with one another: that the only way to satisfy some of the constraints is to fail to satisfy others.

In contrast, when I think about the Bomber's case it feels to me like the constraints of the case are not at odds with one another, and that our infinite being should be able to build a suitable sequence of bombs. ("She first builds bomb B_0 ", I think to myself, "she then builds bomb B_1 …".)

But this is actually an illusion: the constraints of the case are, in fact, at odds with one another. If that does not seem intuitively obvious to me, it is because I'm not smart enough to see the problem at a glance, as I am in the case of A, B and C. I can only see it by going through a non-trivial piece of reasoning.

I think I am also misled by the fact that no inconsistency arises when it comes to finite subsets of the paradoxical configuration of bombs.

Consider, for example, the case with just bomb B_0 , which is set to go off at noon. Since there are no bombs set up to go off before then, B_0 will go off. No paradox so far! Now suppose we add B_1 , which is set to go off at 11:30. Since there are no bombs set up to go off before then, B_1 will go off. And in this scenario B_0 fails to go off because B_1 goes off before noon. Again, no paradox! We can keep adding bombs, one by one. And as long as only finitely many of them have been added there is no paradox.

This means that we have a discontinuity: although our setup is perfectly consistent when there are only finitely many bombs, it becomes inconsistent when there are infinitely many bombers. In other words, there is a inconsistency that arises as a global feature of an infinite scenario, but not for any of its finite parts.

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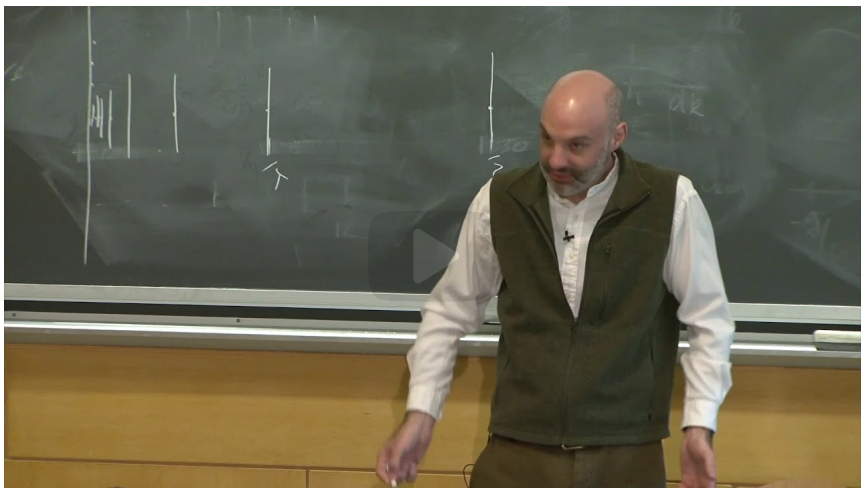

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Could this be seen as a problem with trying to relate

events causing other events?

And sort of relating that to our general notion of continuity

in numbers?

So, like if you try to define a set of events?

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