

## A RESPONSE TO LOKE'S 'IS AN INFINITE TEMPORAL REGRESS OF EVENTS POSSIBLE?' (THINK 31)

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*Loke argues against the possibility of any infinite collection, mainly on the grounds that number as an abstract entity (if it exists) cannot have causal power. But I argue that his argument conflates number as an abstract entity with number as a number of events or things. Loke also maintains that a situation of 'infinities upon infinities' poses problems, and I argue against this. Finally, Loke queries how an 'extra' can be added to an infinite collection, but I suggest this is here a misleading word.*

This is a brief note in reply to Andrew Ter Ern Loke's Article 'Is An Infinite Temporal Regress of Events Possible?' in No. 31 issue of THINK. It explains why I think he has not shown that the reply is in the negative.

Loke's argument rests on the claim that numbers do not have independent causal powers. He uses the example of 10-pound weights on a weighing machine, and then 20-pound weights. He agrees that the number of pounds is relevant to the causal powers of the collection of pounds, thus affecting what weight is registered. But, he says, it is not because of the causal power of the number 20, or the number 10. He then says, 'Fundamentally, it is only the causal power of each of the things in the set (in this case, each of the weights), and not the number of things, which makes a difference to the physical world.' Now, this last sentence may appear obviously false, since it is the *totality* (involving a number) of each of the things which creates the effect. But what Loke means is that numbers as abstract entities, separate from the physical things or

events numbered, do not have causal power. As he says, 'numbers by their nature do not have independent causal power', otherwise they would no longer be abstract entities.

So far, we can agree. But now he paints three scenarios. In the first, there is an infinite number of people, arranged in line, and opposite each is a packet of Christmas presents. If both the line of packets and the line of people are numbered from 1 to infinity, so that person number  $n$  is opposite packet number  $n$ , then let each person  $n$  grab the packet number  $2n$ , so that person 1 grabs packet 2, person 2 grabs packet 4, person 3 packet 6, and so on. It can be seen that each person now has a packet but an infinite number of packets is left over (numbers 1, 3, 5, ... to infinity). Now change to the second scenario, where each person simply grabs the packet opposite him, i.e. person  $n$  grabs packet  $n$ . Then there will be no packets left over. In the third scenario, the number of people is finite, but otherwise the situation is the same as in the first scenario. Person  $n$  grabs packet  $2n$ . This time there are packets left over, but also not every person ends with a packet. For example if there are 6 people, persons 4, 5 & 6 have no presents to grab. If, like Loke, we now *define* 'left over' as meaning after everyone has ended with a packet, then in scenario one there are left-over packets but in scenario 3 there are no left over packets, and the only difference between the two is that scenario 1 involves a physical infinite – an infinite number of people, and of packets, – whereas scenario 3 does not.

Loke now argues in a manner similar to when discussing the lead weights and weighing machine. He says, 'the "number" of a set of things is not the sort of entity which in conjunction with the things in the set would have certain causal powers that the things would not have had.' As with the lead weights example, we agree. But then he claims that therefore 'it cannot be claimed that the number (whether finite or infinite) of person-present... would make a difference concerning the presence or absence of causal power with respect to leftovers.' But surely here he is

conflating number as an abstract entity (if it exists as such) with number as a number of events or things. The latter does of course have causal power.

Since scenario 1 has leftovers and scenario 3 has (by his definition of the word) no leftovers, and he thinks number alone, which is the only difference between the two scenarios, cannot have causal power to make any physical difference, then his conclusion is that scenario 1, and indeed scenario 2, each involving the physical infinite – an infinite collection of physical things – cannot exist. I have explained why I think this conclusion need not be accepted, since it stems from a confusion over the word ‘number’.

Earlier, Loke points out that in scenario 1 the process can be repeated as many times as one likes, the new line of packets being constituted by the previous leftovers. As he says, ‘Unending supply of infinities upon infinities of leftover presents would be generated, simply by picking the presents from the right positions!’ This is certainly counter-intuitive, but in this field of study the counter-intuitive can often be true. One should also beware of thinking that ‘infinities upon infinities’, i.e., in this example at least, an infinity of infinities, if the packet-grabbing is repeated endlessly, is, in the physical realm, fundamentally different from a single infinity, and therefore of thinking that it cannot be created by just a change of picking position as with the difference between scenarios 1 and 2. There is, I suggest, no such fundamental difference in the physical realm. Also, he asks where the ‘extra’ leftovers come from in scenario 1 and its repeats, as compared with either fewer repeats or with scenario 2. But surely there is no such thing as an extra to a collection which is already infinite. Adding to an infinite collection does not increase the number of items.

Since Loke believes there cannot be a physical infinite collection, he therefore believes there cannot be an infinite temporal regress of events since this is an infinite collection, albeit in the past, but I hope I have shown that his

arguments are not sufficient to show the impossibility of this physical infinite collection or any other.

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