

The sorites paradox

PHIL 20229

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1 Some examples of sorites-style arguments

The paradox we’re discussing today and next time is not a single argument, but a family of arguments. Here are some examples of this sort of argument:

1. Someone who is 7 feet in height is tall.
 2. If someone who is 7 feet in height is tall, then someone 6’11.9” in height is tall.
 3. If someone who is 6’11.9” in height is tall, then someone 6’11.8” in height is tall.
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- C. Someone who is 3’ in height is tall.

The ‘...’ stands for a long list of premises that we are not writing down; but the pattern makes it pretty clear what they would be. We could also, rather than giving a long list of premises ‘sum them up’ with the following *sorites premise*:

For any height h , if someone’s height is h and he is tall, then someone whose height is $h - 0.1''$ is also tall.

This is a universal claim about all heights. Each of the premises 2, 3, ... is an instance of this universal claim. Since universal claims imply their instances, each of premises 2, 3, ... follows from the sorites premise.

This is a paradox, since it looks like each of the premises is true, but the conclusion is clearly false. Nonetheless, the reasoning certainly appears to be valid.

Once we see this, it is easy to come up with other instances of the paradox:

1. 10,000 grains of sand is a heap of sand.
 2. 10,000 grains of sand is a heap of sand, then 9999 grains of sand is a heap of sand.
 3. 9999 grains of sand is a heap of sand, then 9998 grains of sand is a heap of sand.
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- C. 1 grain of sand is a heap of sand.

Sorites premise: For any number n , if n grains of sand is a heap, then $n - 1$ grains of sand is a heap.

1. A man with 1 hair on his head is bald.
 2. If a man with 1 hair on his head is bald, a man with 2 hairs on his head is bald.
 3. If a man with 2 hairs on his head is bald, a man with 3 hairs on his head is bald.
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- C. A man with 100,000 hairs on his head is bald.

Sorites premise: For any number n , if someone with n hairs on his head is bald, then someone with $n + 1$ hairs on their head is bald.

There's also a special case of this sort of argument that has to do with our powers of perceptual discrimination. Suppose that we line up 10,000 color swatches, which range from bright red (swatch 1) and the beginning to bright orange at the end (swatch 10,000). It seems as though, with 10,000 swatches, there will be no discernible difference between any two adjacent swatches, so that every swatch will look the same as the one next to it in the series. We can then construct the following argument:

1. Swatch 1 is red.
 2. If swatch 1 is red, then swatch 2 is red.
 3. If swatch 2 is red, then swatch 3 is red.
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- C. Swatch 10,000 is red.

If we assume that each swatch looks the same as the one next to it, then this version of the sorites argument can be thought of as having a rather special sorites premise: For any objects x , y , if x looks the same as y and x is red, then y is red. This certainly seems hard to deny.

2 What words can be used in sorites-style arguments?

Each of the above arguments uses a certain predicate — ‘tall’, ‘bald’, ‘heap’, ‘red.’ Not every predicate can be used in a sorites argument. Consider: ‘above average in height for someone in 105 Pasquerilla Center right now.’ (What would the sorites premise be for this predicate?)

One important feature of ‘tall’ and the other predicates which can be used to generate sorites-type paradoxes is that they all admit of borderline cases: each of these predicates is such that there are things to which we aren’t sure whether or not the predicate applies, no matter how much we know about the thing.

This feature — having borderline cases — should, as Sainsbury emphasizes be distinguished from two others: relativity to a reference class and ambiguity.

Can we generate a sorites paradox for any predicate which has borderline cases?

3 Ways of solving the paradox

It seems that a response to the sorites paradox will fall into one of three categories:

- Rejecting the initial premise.
- Rejecting one of the other premises, and/or the sorites premise.
- Rejecting the validity of the argument.

The problem is that none of these looks initially promising.