

Week 2 (23 Feb, 2005): Paradoxes

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Disclaimer: Some of these are real paradoxes, but others are *pseudo-paradoxes* (i.e., there is no underlying actual contradiction). Can you tell which are which?

1 Liar I

“A man says that he’s lying. Is what he says true or false?”

– Eubulides of Miletus, 4th century BC

2 Liar II

“One of themselves, even a prophet of their own, said the Cretans are always liars.”

– Saint Paul, New Testament

3 Existence of God

This is a “proof” due to the French philosopher John Buridan of the 14th century. Consider the following sentences.

- God exists.
- None of the sentences in this pair is true.

If the second sentence is true, then both sentences are false. In particular, the second sentence is false, which gives a contradiction. Therefore the second sentence must be false, which implies at least one sentence is true, which in turn requires that “God exists” is true.

4 Barber

The Barber of Seville shaves those and only those in Seville who do not shave themselves. Does the Barber shave himself?

5 Vicious Circle

Consider the following statements. What are their truth values?

- The following statement in this list is true.
- The following statement in this list is true.
- The first statement in this list is false.

Sources

- Bradley Dowden. "Liar Paradox". From *Internet Encyclopedia of Philosophy*. <http://www.iep.utm.edu/>.
- Eric W. Weisstein. "Barber Paradox." From *MathWorld*—A Wolfram Web Resource. <http://mathworld.wolfram.com/BarberParadox.html>