

Putting your skills to the test

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Learning objectives

By the end of today:

- Apply the tools you have learned in this class to various examples
- Understand the final homework assignment



How would you determine if the earth is flat or round?

Think-pair-share activity

Spherical earth

- Earth orbits the sun, and the moon orbits the Earth
- Gravity does exist
- The moon landing provide photos of the spherical Earth
- Satellites and GPS orbit the Earth
- Northern lights are caused by charged particles hitting molecules at the north pole (where Earth's magnetic field is weaker)

Flat earth

- The sun and moon are the same size, and they both orbit Earth
- Gravity does not exist
- Moon landing and other NASA missions were faked
- Satellites work because they are attached to balloons
- Northern lights are just holograms

What fallacies are the flat-earthers committing?

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- Not employing Occam's razor
- Ad hoc explanations
- Argument from incredulity or argument from ignorance

NASA

POP
SCI



Science versus pseudoscience

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- Scientific ideas can at least in principle be tested and are falsifiable
- Scientific findings are expressed in peer-reviewed journals
- Pseudoscience avoids putting claims to the test
- Pseudoscience may appeal to emotion, authority, ignorance, or other logical fallacies
- Pseudoscience does not apply Occam's Razor



James Randi prize



One Million Dollar Paranormal Challenge (1964-2015)

- Must demonstrate some type of paranormal ability or behavior
- 1000 failed applicants, no one has claimed the prize

Why is this important?

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- Americans spend about \$2 billion per year on fortune telling
- Americans spend about \$3 billion per year on homeopathic medicine
- Americans spend about \$28 billion per year on supplements that have not been shown to have an effect
- And so forth...



Peter Popoff Ministries

Homework for next week

- Go back to Sagan's baloney detection kit. Choose one of the tools he discussed **OR** create your own. Explain how the tool works.
- Then, show an example of the tool applied to a news article, politician speaking, Youtube video, or something else
- It is due by the 16th March (Friday) at midnight

For example

- Possible tools I could use:
 - non sequitur (Latin for it doesn't follow)
 - Suppressed evidence

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-



Donald Trump

President

"You take Pulse nightclub. If you had one person in that room that could carry a gun and knew how to use it, it wouldn't have happened, or certainly to the extent that it did."

in a meeting – Wednesday, February 28, 2018