## The Eternal Recurrence: Understanding Parallel Universes through Nietzsche

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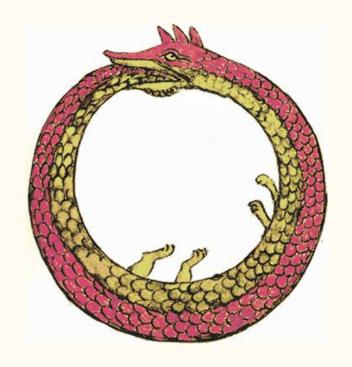
### Roadmap

Thesis: If we accept the reasoning of the physicist Max Tegmark, we may be committed to a version of Friedrich Nietzsche's doctrine of the eternal recurrence

- 1) What is eternal recurrence?
- 2) Tegmark's "identical parallel universes"
- 3) Tegmark's identical "doppelgangers"

#### Nietzsche's Doctrine of Eternal Recurrence

- Infinite time and space + finite
  possible arrangements of matter =
  ER
- "Fellow-man! Your whole life, like a sandglass, will always be reversed and will ever run out again [...] This ring in which you are but a grain will glitter afresh for ever" (Nietzsche, 25).

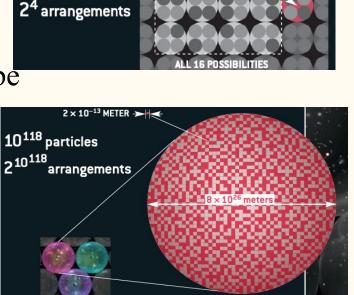


#### Max Tegmark's Identical Parallel Universes

• What's a "multiverse"?

Tegmark argues that matter can only be arranged in so many ways

Parallel universes and identical parallel universes



4 particles

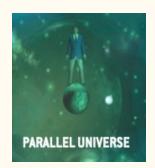
#### Tegmark's exact "doppelganger" copies

• <u>Similar</u> parallel universes within 4 x  $10^{26}$  meters from earth

• Doppelganger "copy" within  $10^{10^{118}}$  meters from earth

• Who's the "real" you?







#### Conclusion

• If we accept the reasoning of the physicist Max Tegmark, we may be committed to a version of Nietzsche's doctrine of the eternal recurrence

• Fatalism?

• The eternal recurrence of your exact life?

# Thank you to the Undergraduate Research Center!

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