

Reality and Abstraction

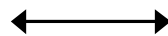
A Look at Different Models

Hans Rudolf Straub – Semfinder AG

Topic List - Reality and Abstraction

1. Classic positions (explained in one scenery)
2. How different positions locate their universals
3. The reality-model relation in different positions

Ontologies (What does exist) → Two Extremes



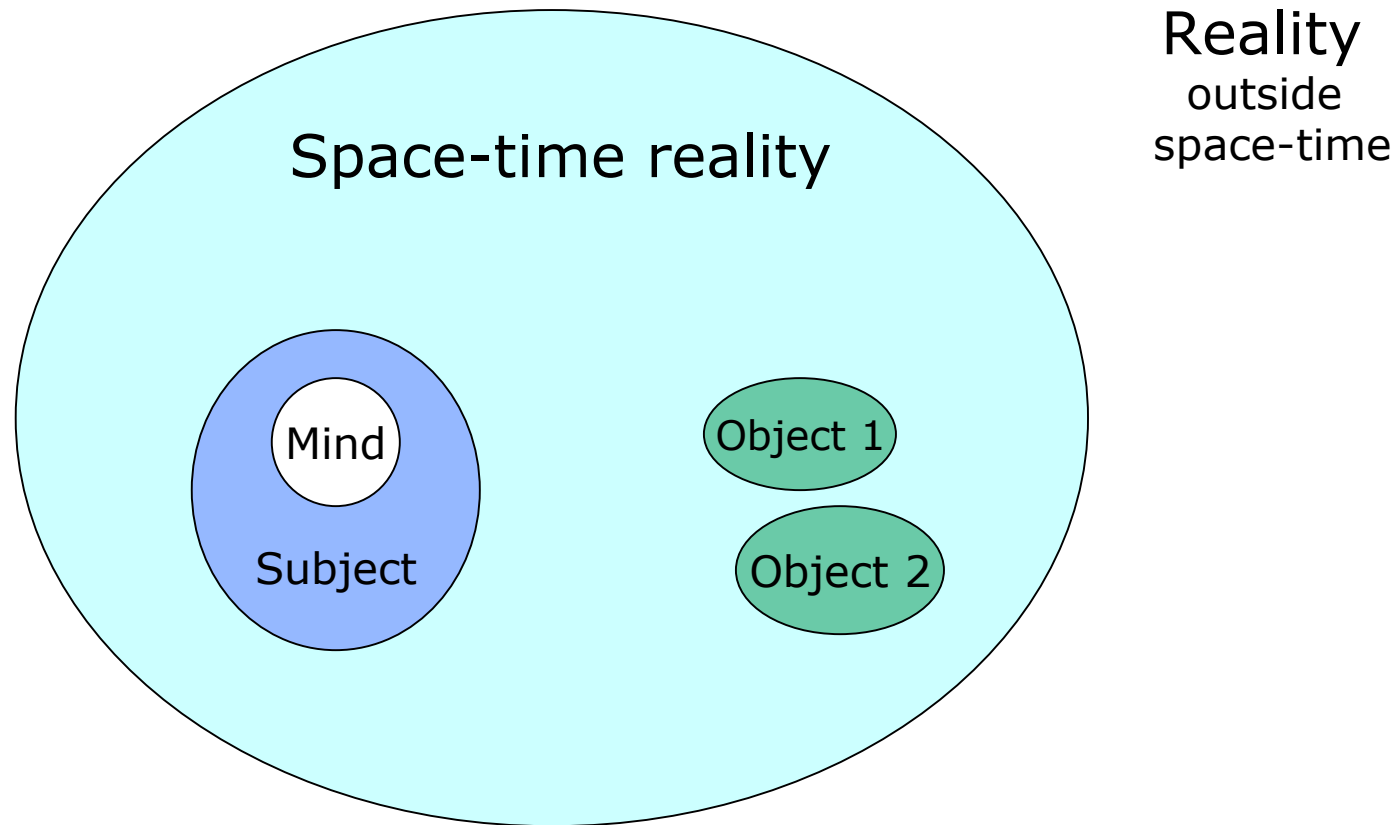
Solipsism

All is in my mind

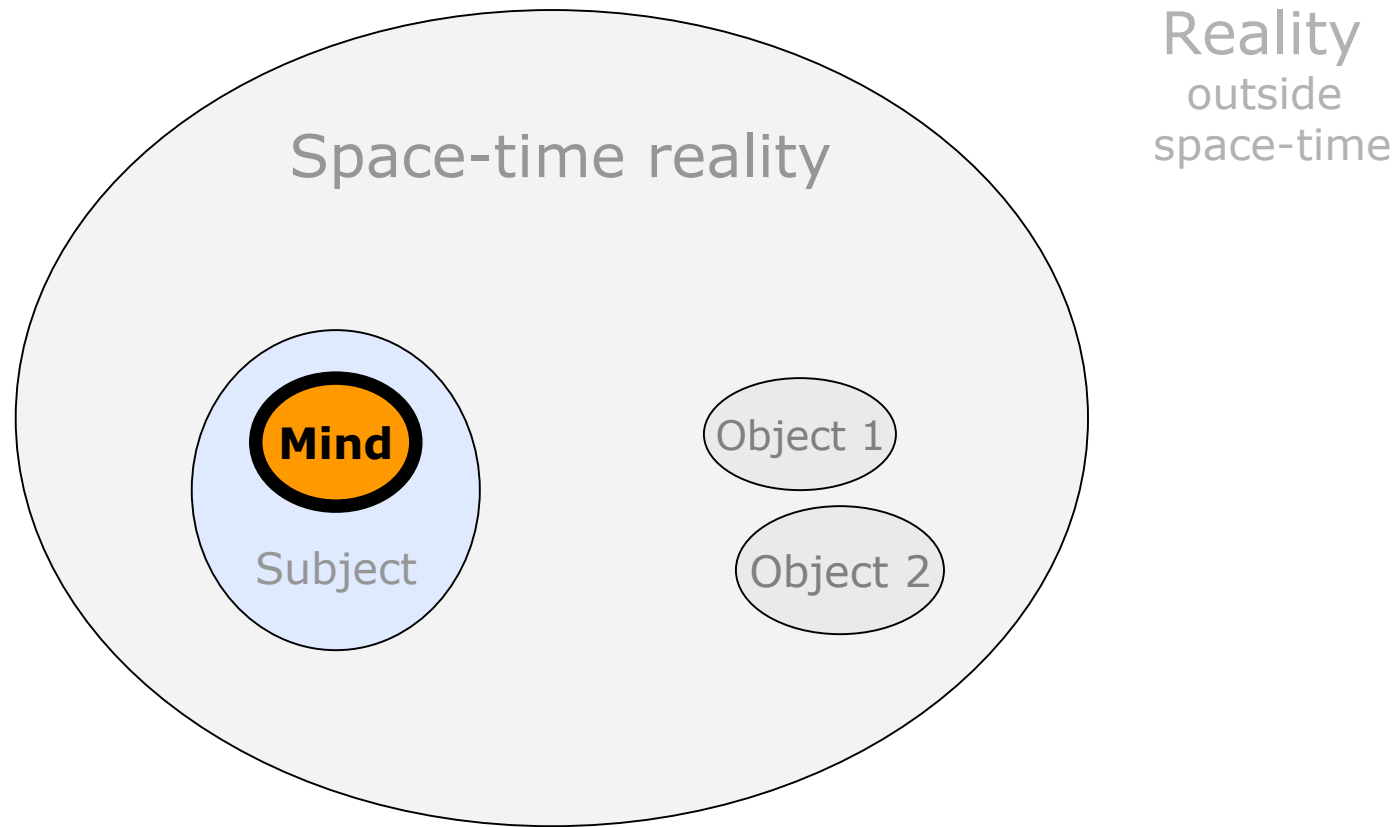
Naive Realism

Only material objects exist

Scenery for the Realism-Debate

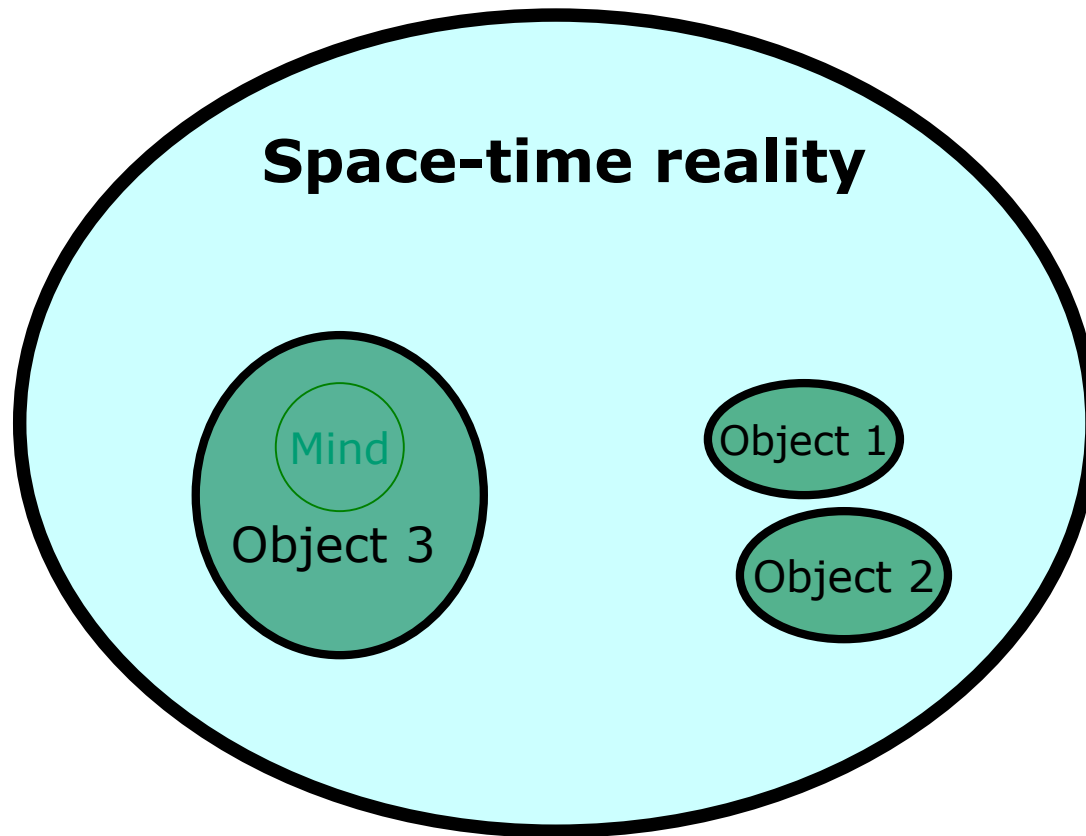


Extreme 1: Solipsism



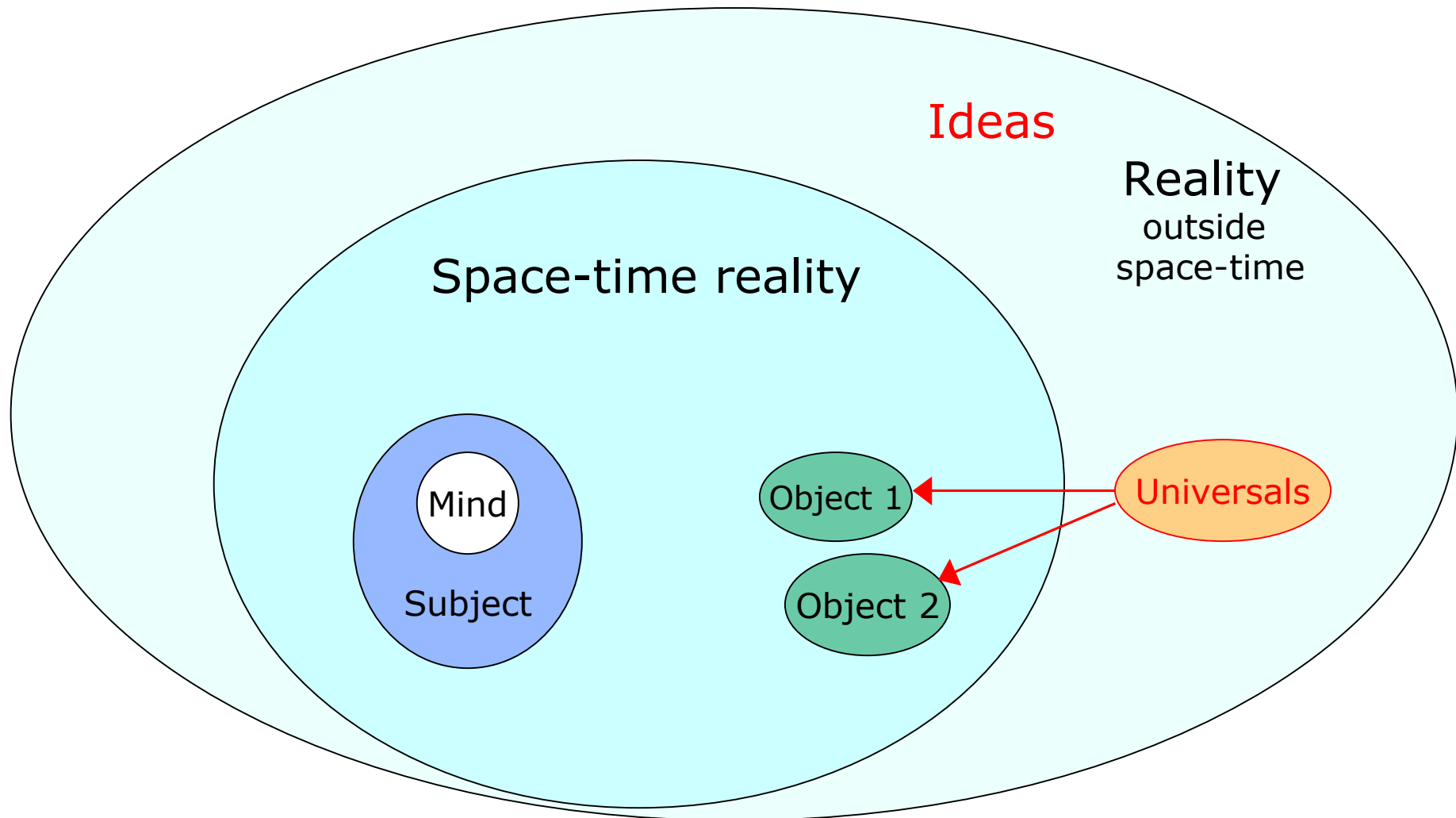
The world exists only in my mind.
Reality is an illusion.

Extreme 2: Naive Realism



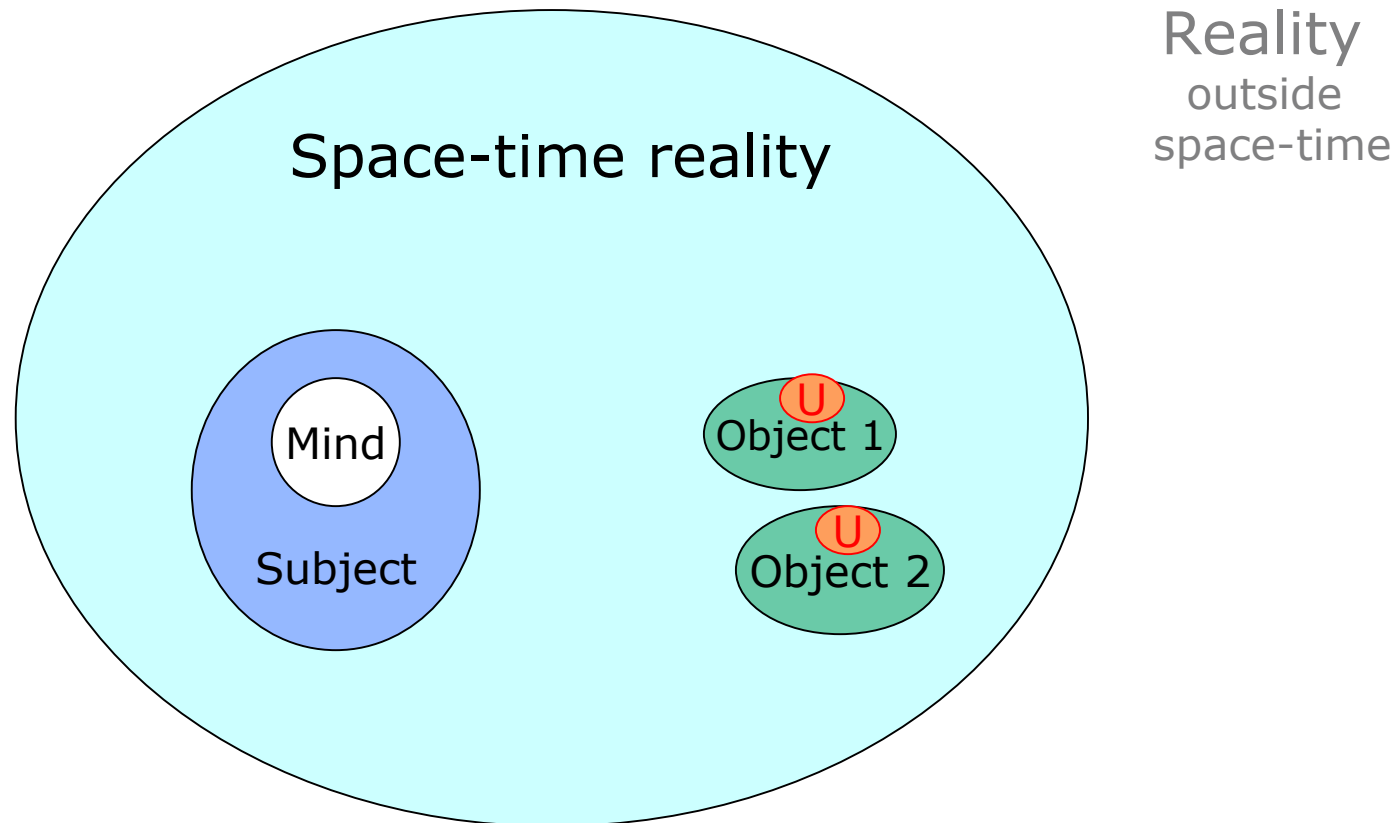
Reality consists of material objects. A subject is just another object.
What is in my mind is not important, important is what exists in reality.

"Platonian" Realism



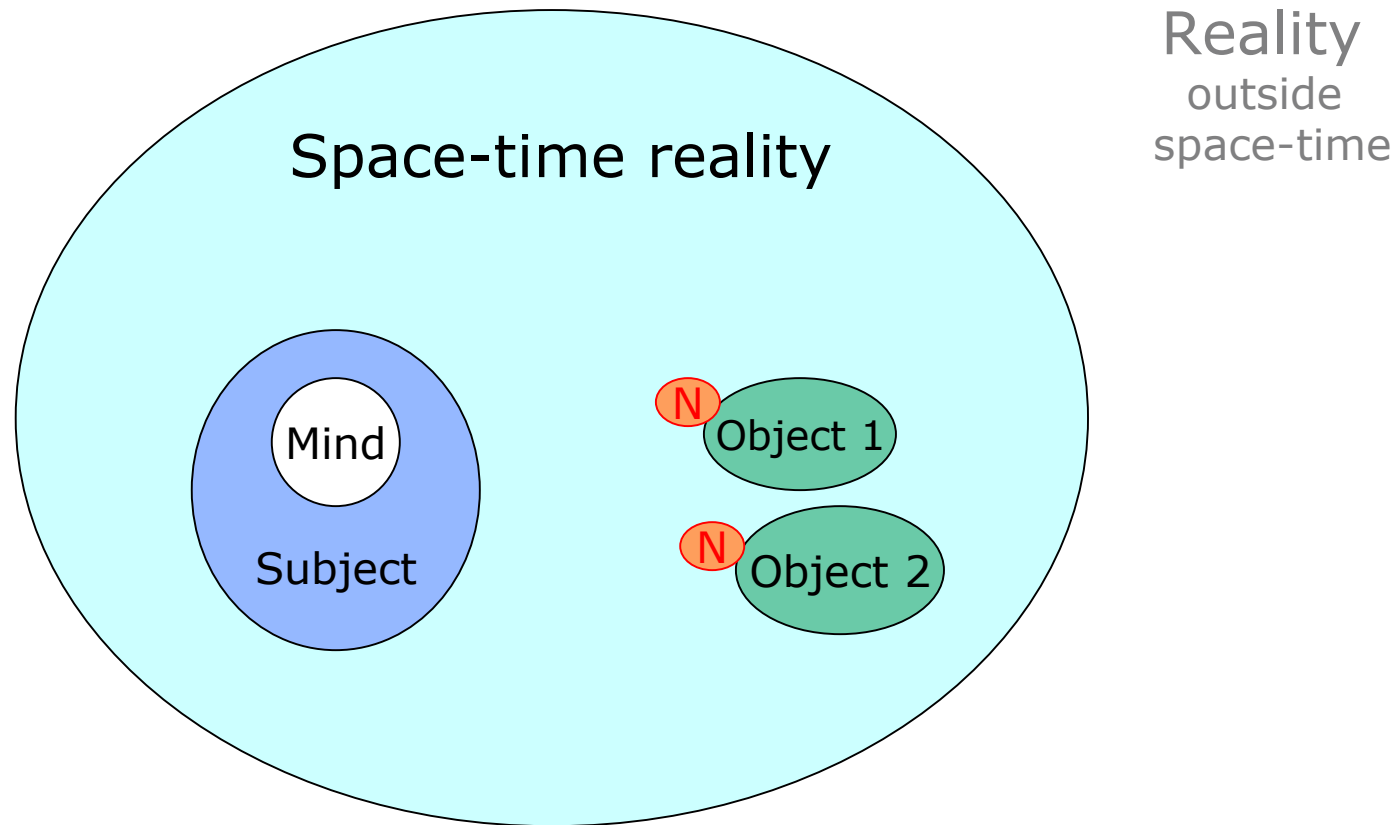
Material objects are created by the ideas behind them (universals). Our Space-Time Reality is just a shadow of the more real ideal world.
→ *universalia ante rem.*

"Aristotelian" Realism



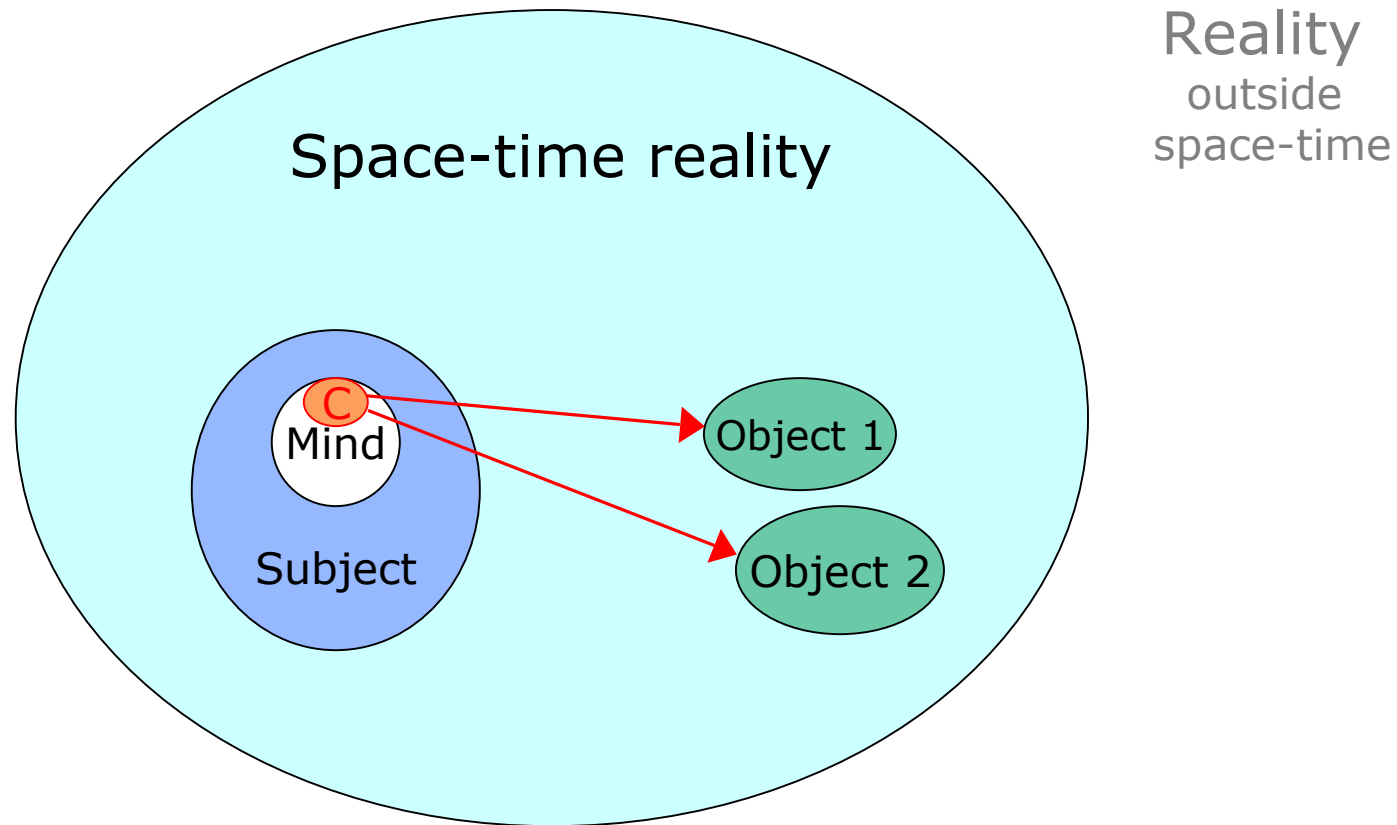
The common core (universal **U**) in similar objects (individuals) is part of the objects and not outside of them. → *universalia in rebus*

Extreme 3: Nominalism



What is common in similar objects is just their name **N** .
→ *Universalia sunt nomina*

Conceptualism



What is common in objects with the same name is a concept **C** in the minds of human beings.

Are such "philosophical" question today still relevant?

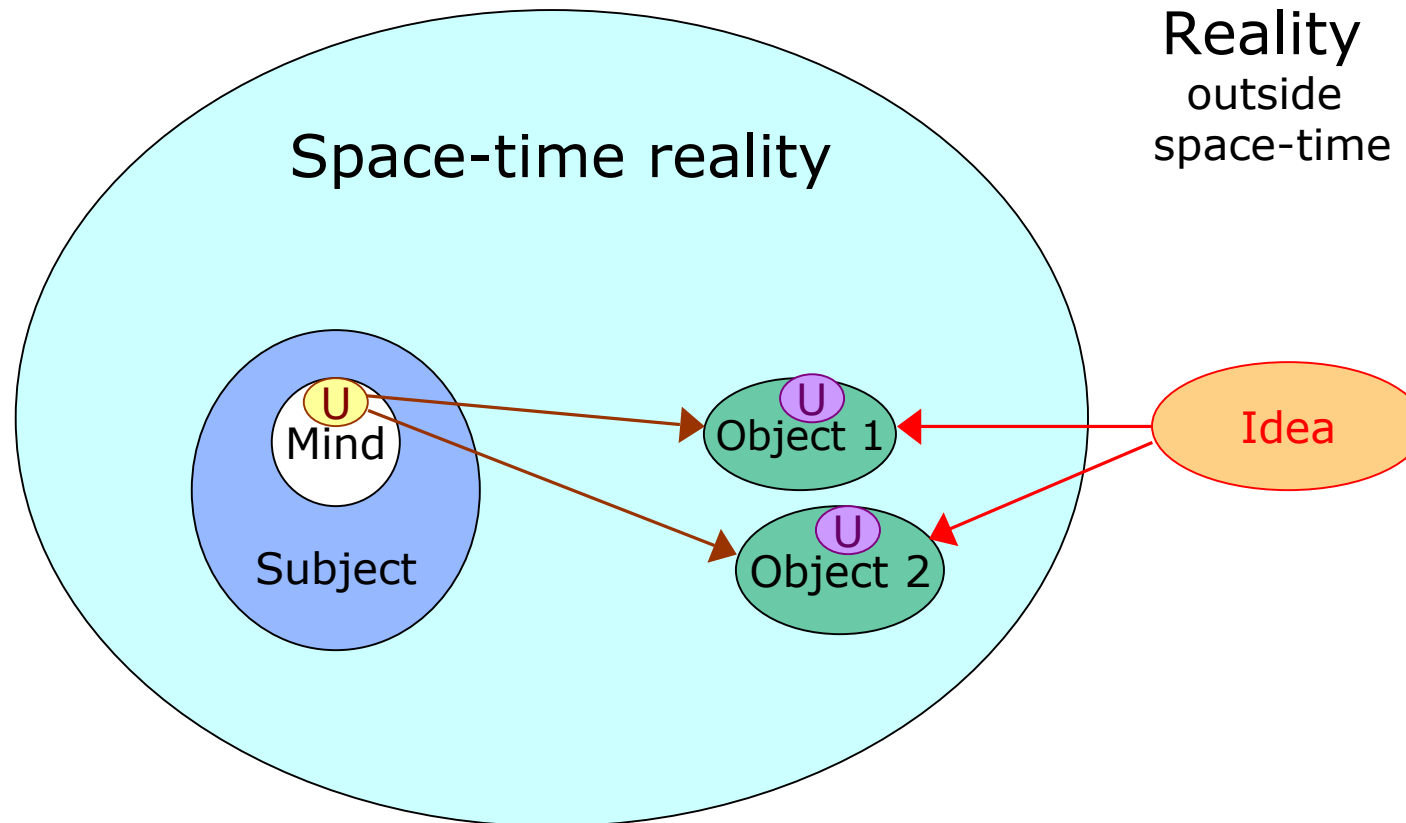
Are such "philosophical" question today still relevant?

Yes!

Our models and ontologies should represent reality

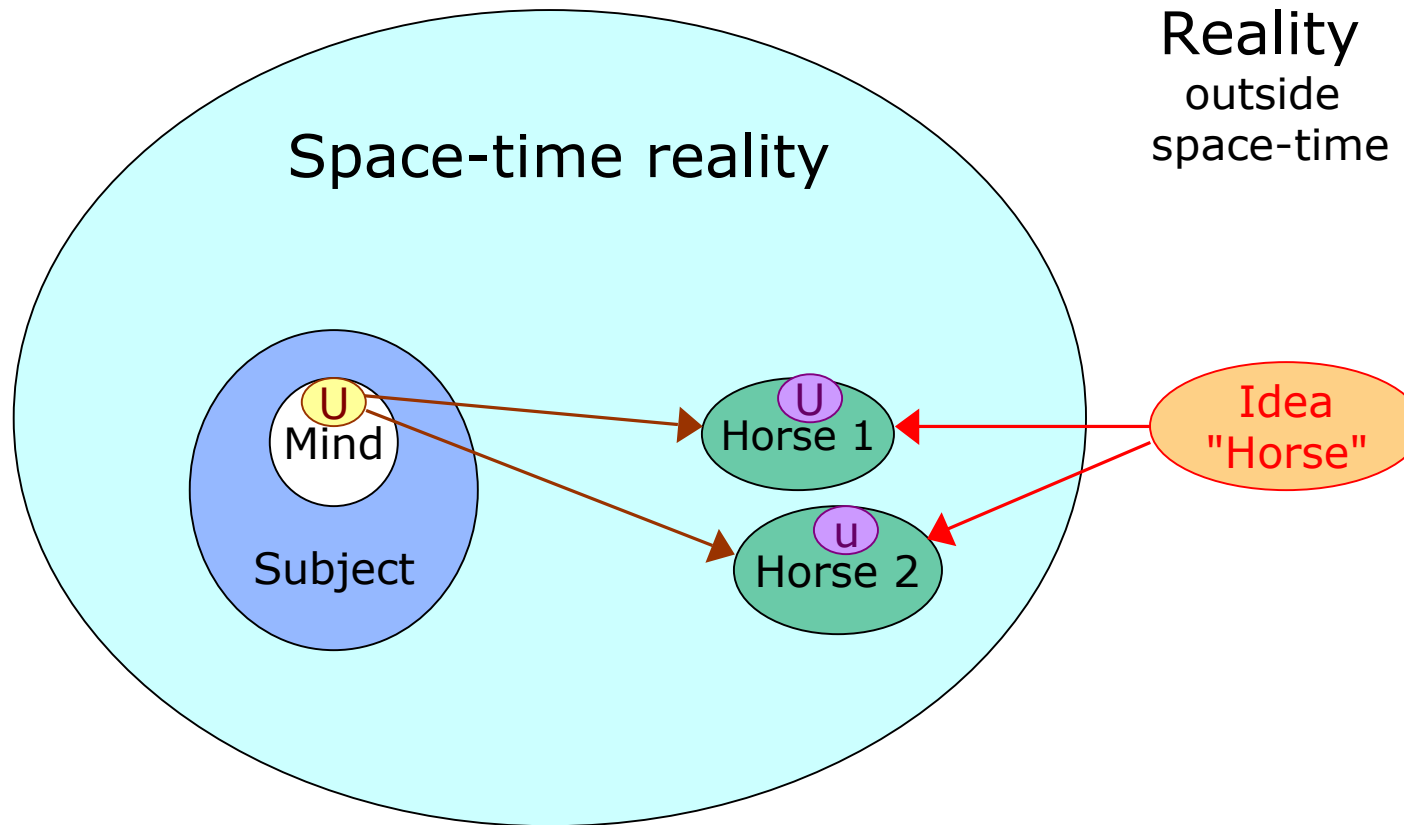
The **link between reality and models** is crucial and
still not trivial

Where are Universals? → Several Examples



- Where are universals?
- Outside space-time → "Platonian"
 - Part of the objects → "Aristotelian"
 - In the mind of humans → "Conceptualist"

Where are Universals for Living Systems (Species)?



Where is the "horse"?

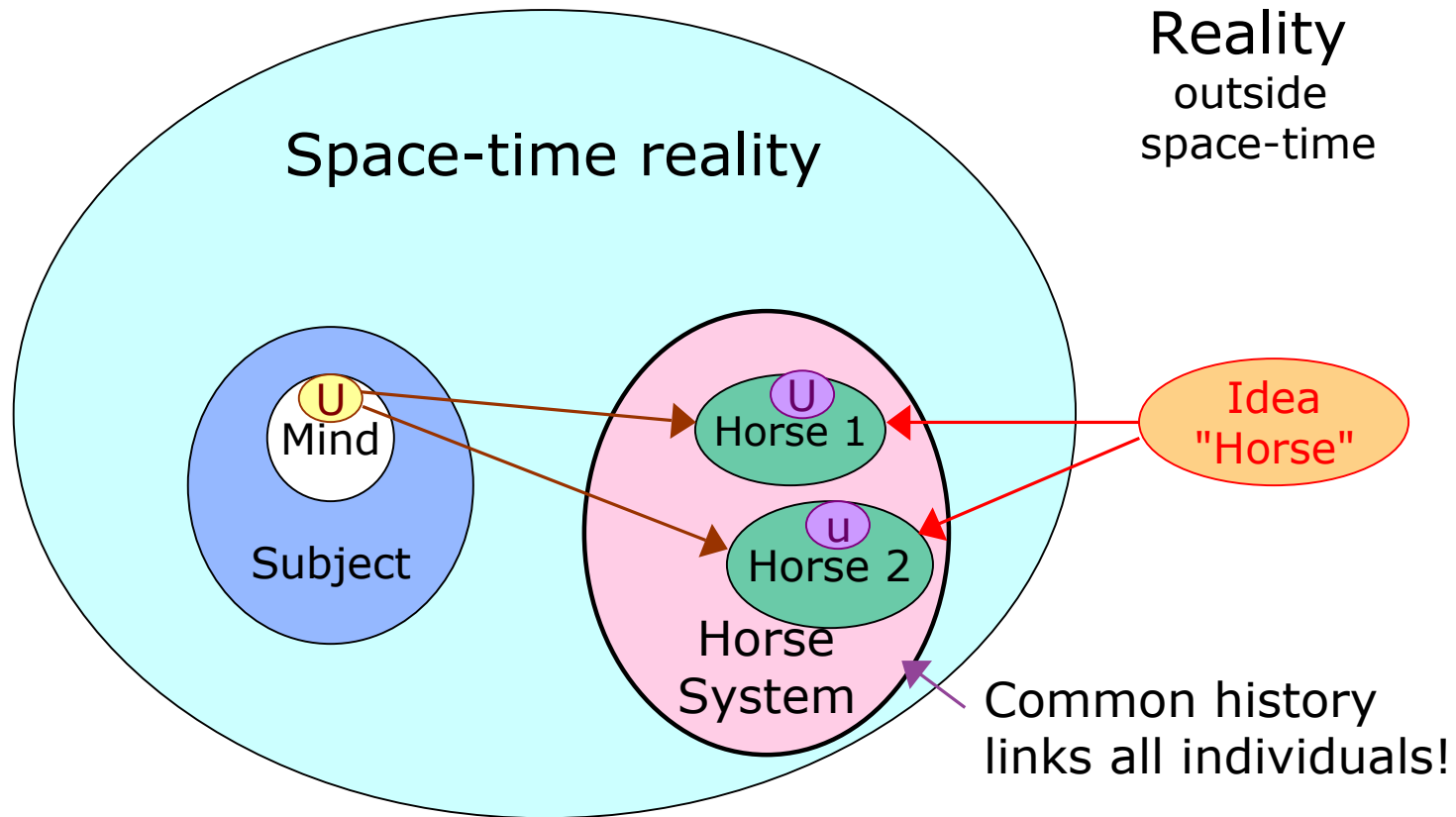
- Outside space-time
- Part of the objects
- In the mind of humans

→ "Platonian"

→ "Aristotelian"

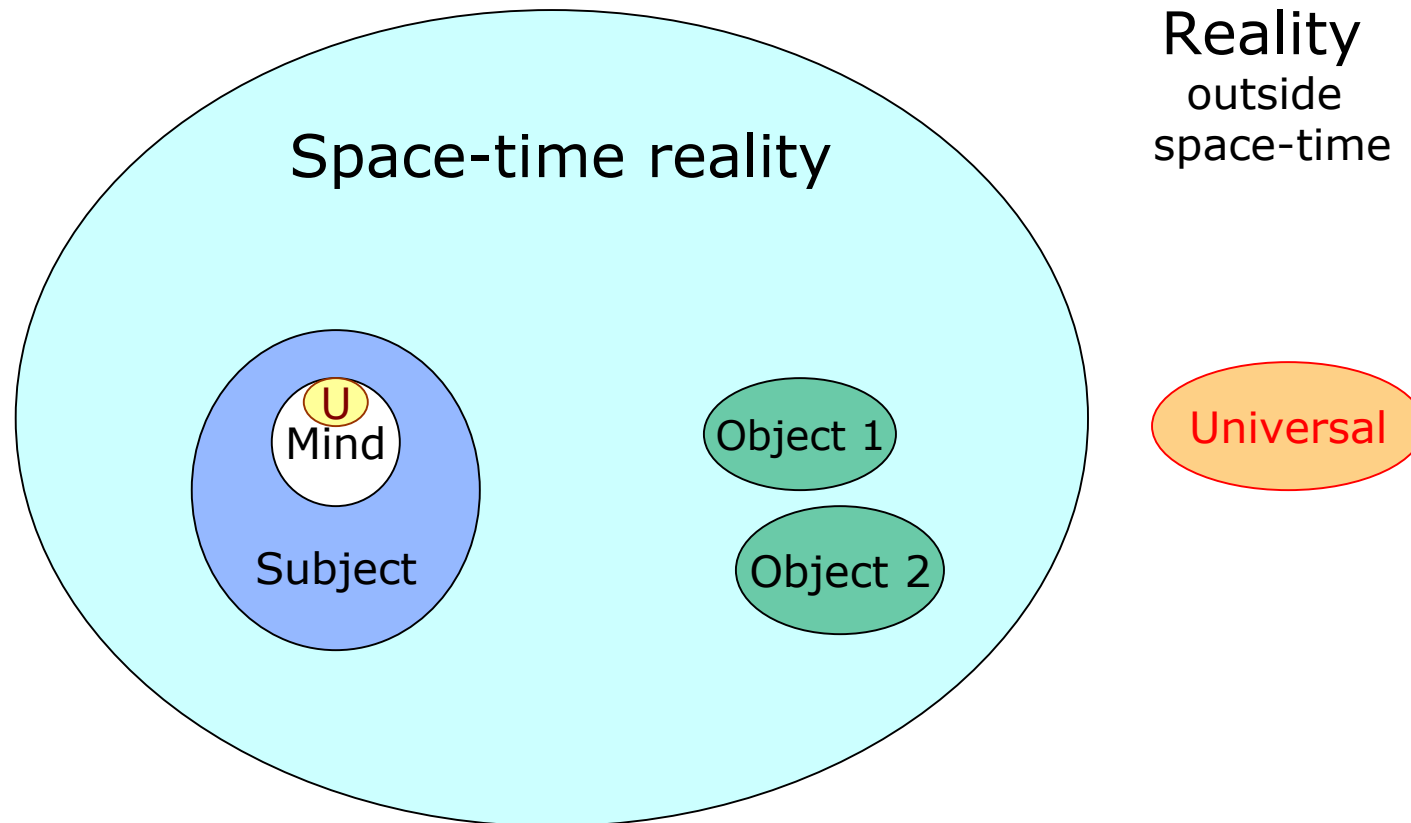
→ "Conceptualist"

Where are Universals for Living Systems (Species)?



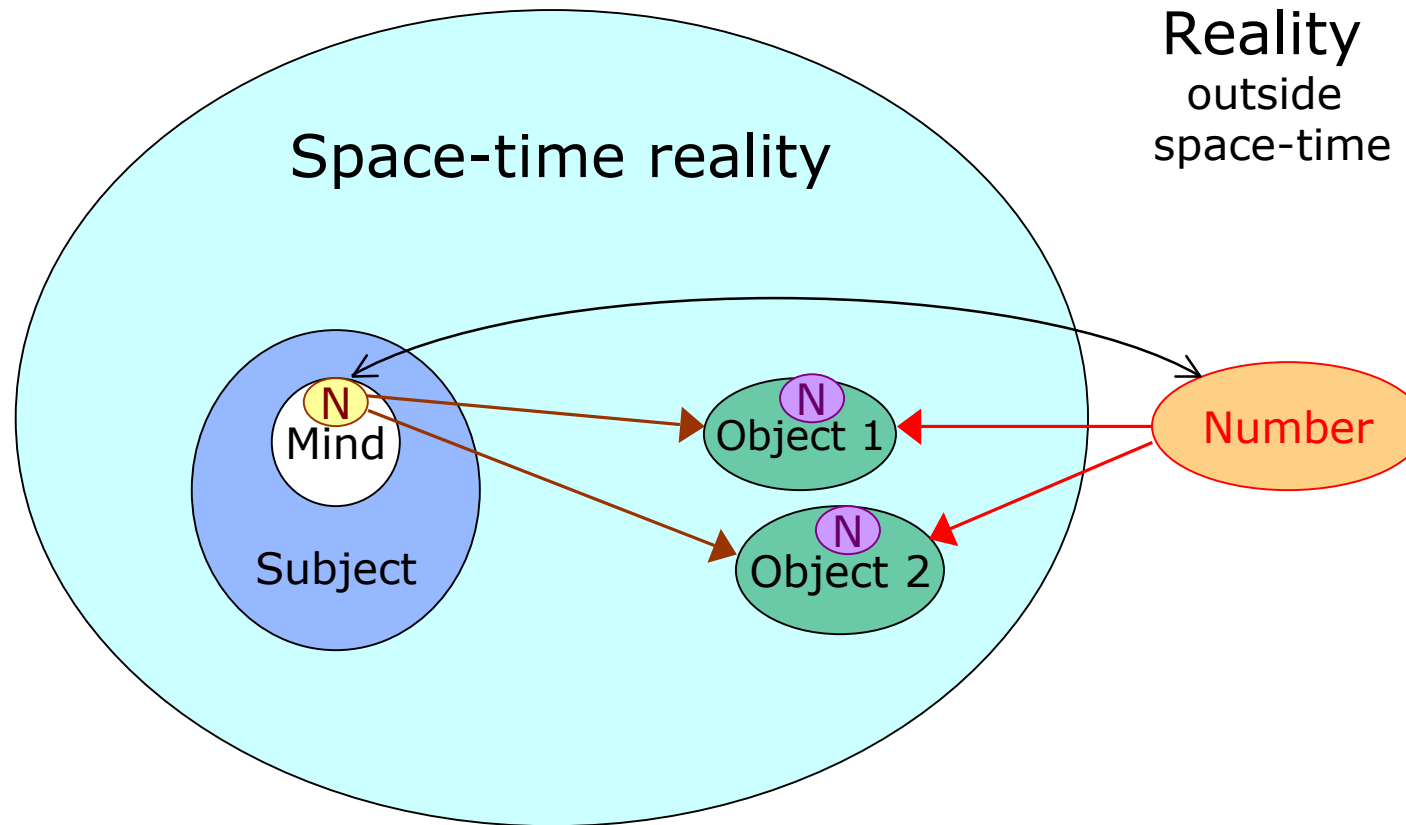
- Where is the "horse"?
- Outside space-time
 - Part of the objects
 - In the mind of humans
- "Platonian"
 - "Aristotelian"
 - "Conceptualist"

Where are Universals for Fictions and Plans?



Where is the "unicorn"? → Outside space-time → "Platonian"
→ Part of the objects → "Aristotelian"
→ In the mind of humans → "Conceptualist"

Where are Numbers, Logic, Mathematics



Where are numbers?

→ Outside space-time

→ "Platonian"

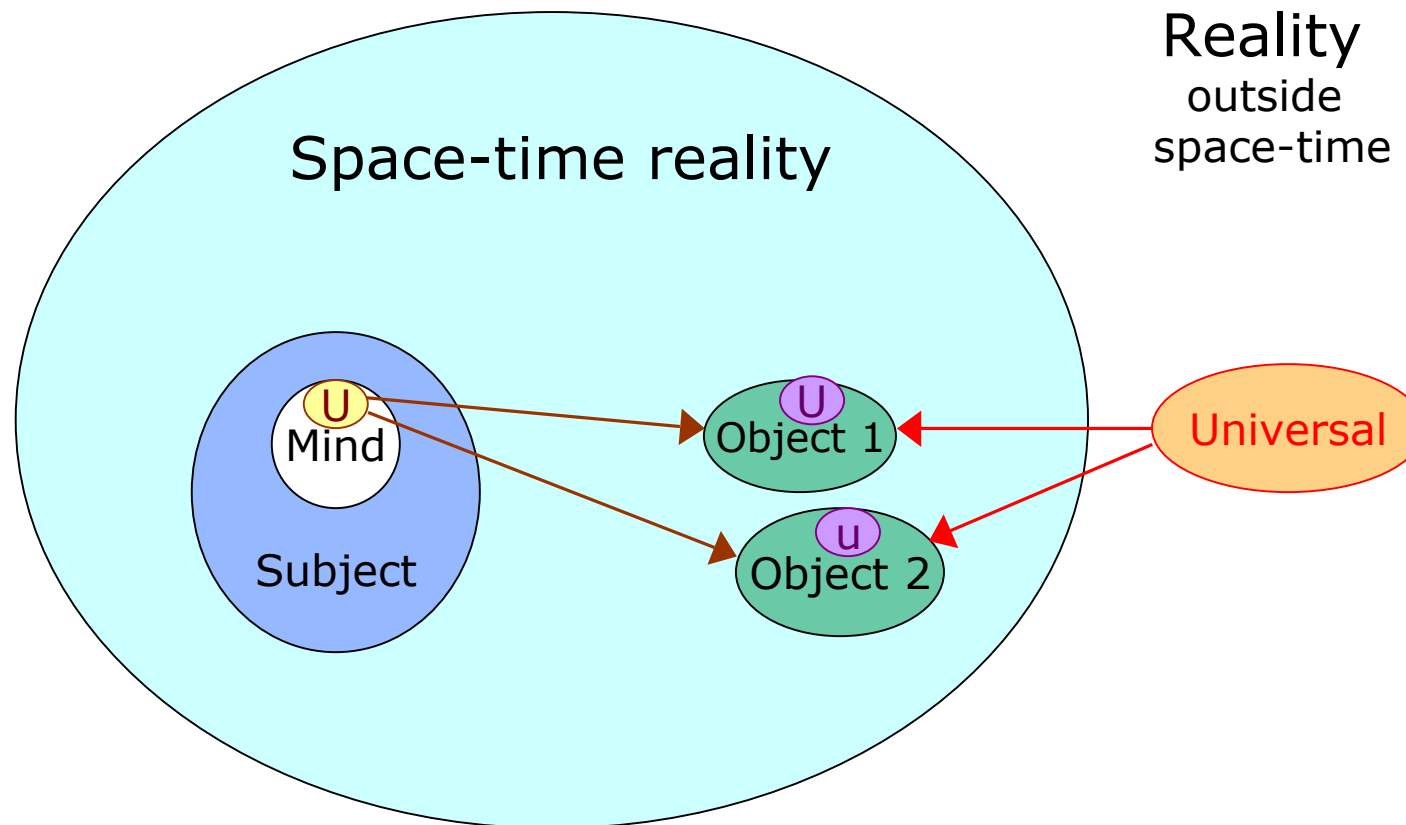
→ Part of the objects

→ "Aristotelian"

→ In the mind of humans

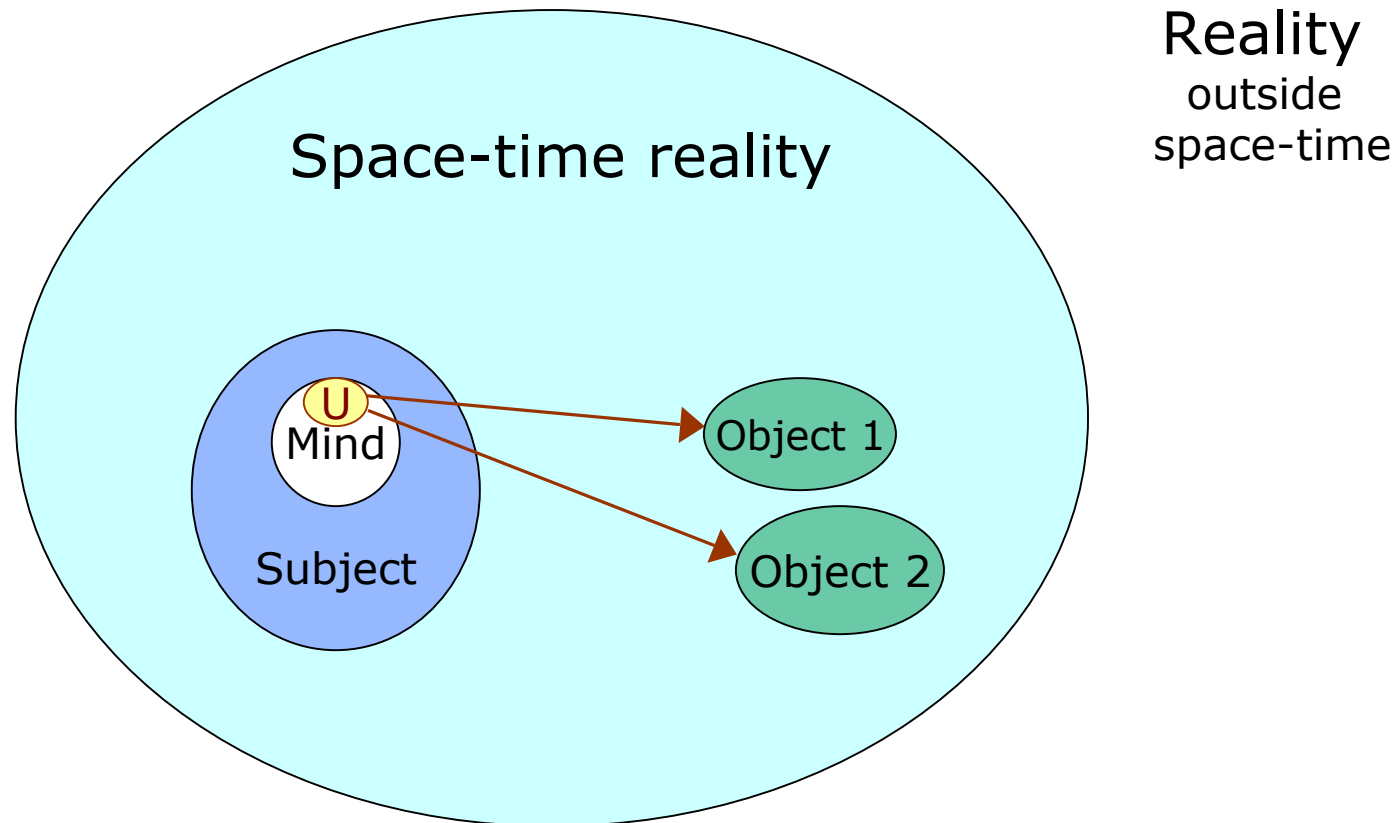
→ "Conceptualist"

Where are Universals for Non-material Concepts?



Where is a "diagnosis"? → Outside space-time → "Platonian"
→ Part of the objects → "Aristotelian"
→ In the mind of humans → "Conceptualist"

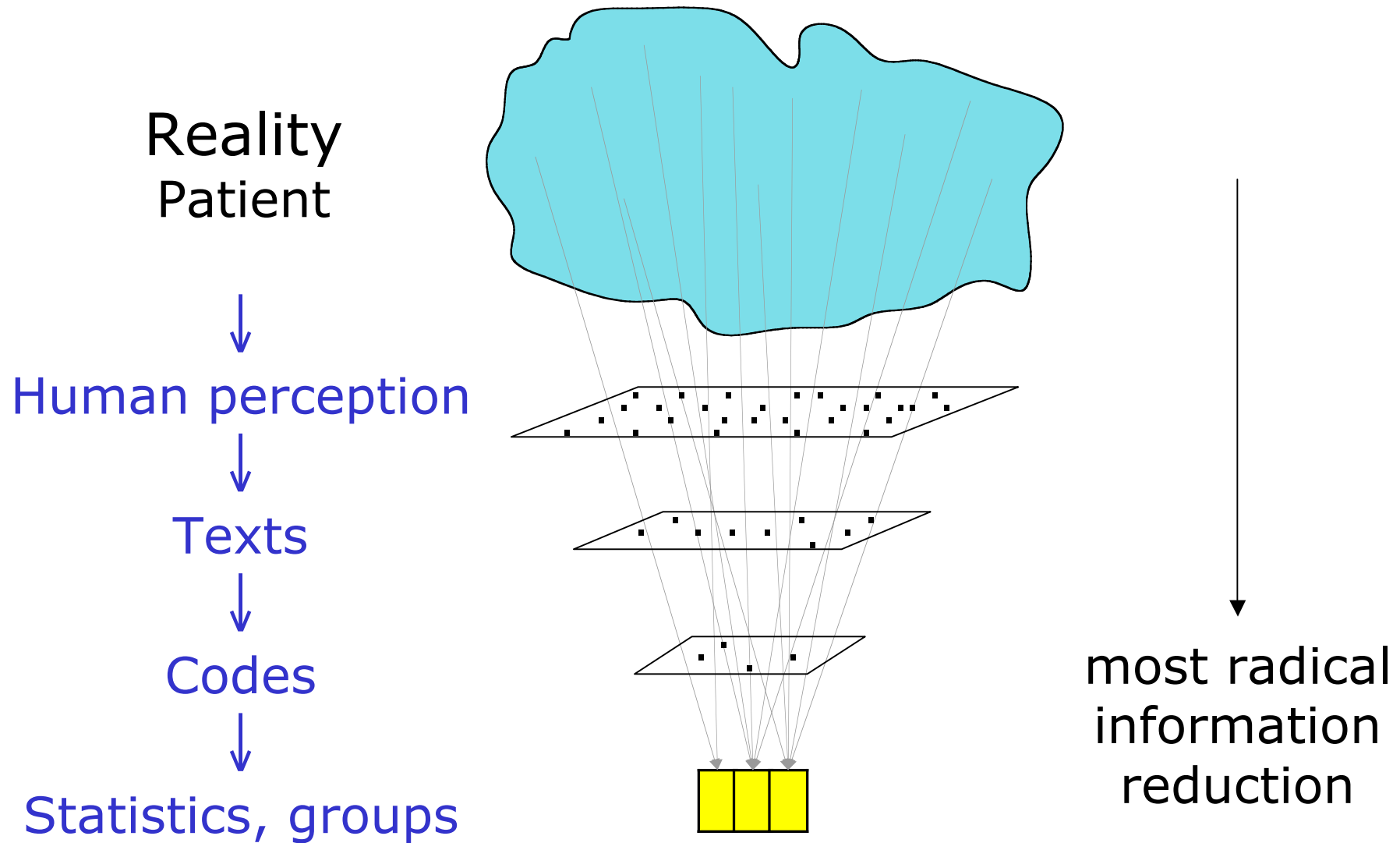
Where are Universals for Non-material Concepts?



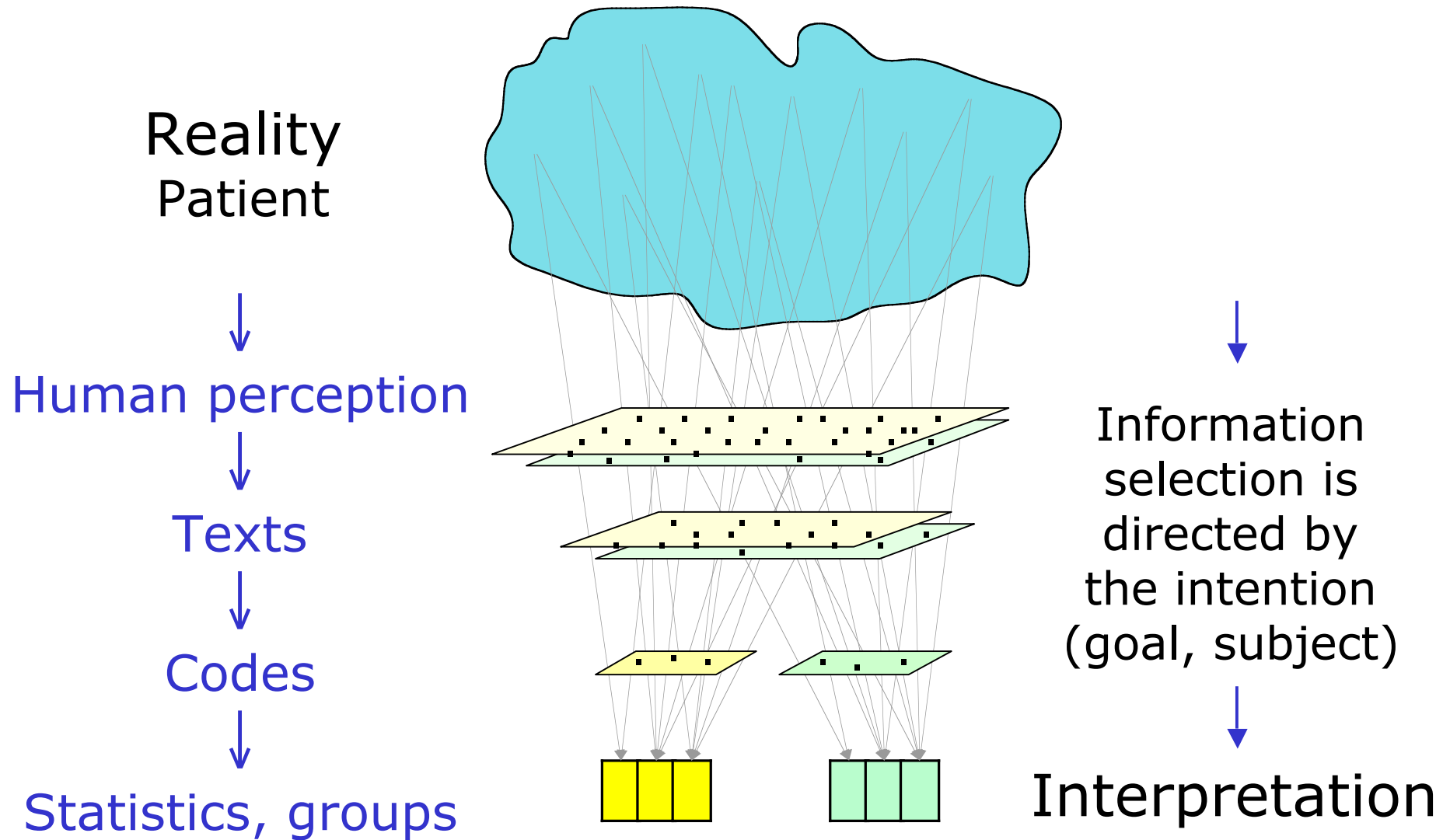
Where is the universal of a certain "diagnosis"?

Many concepts have in reality no **independent** identity: "table", "fracture".
All such universals are **a question of interpretation** (in the mind).

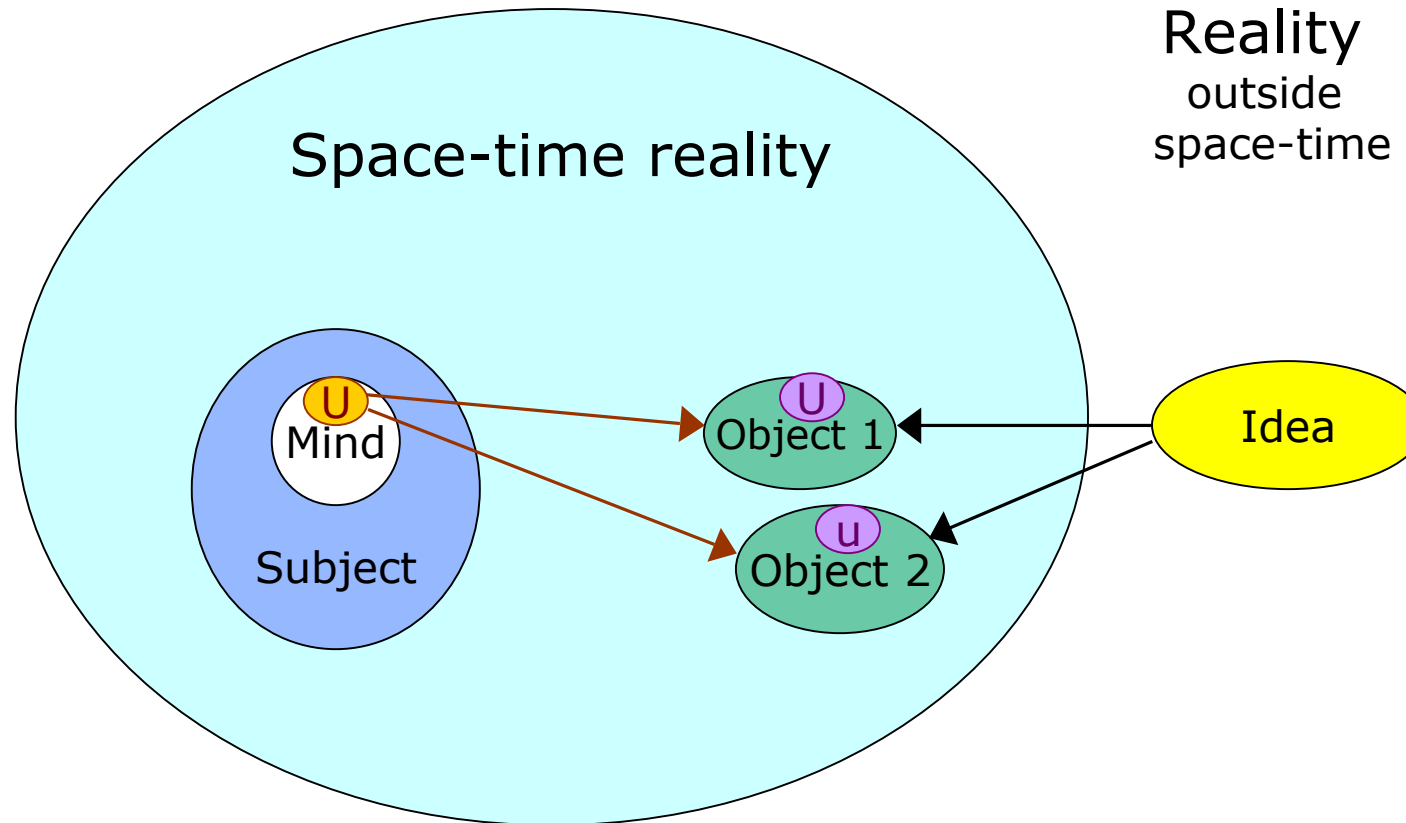
Our Job: From the Patient to the ICD-10 Code



Our Job: From the Patient to the ICD-10 Code

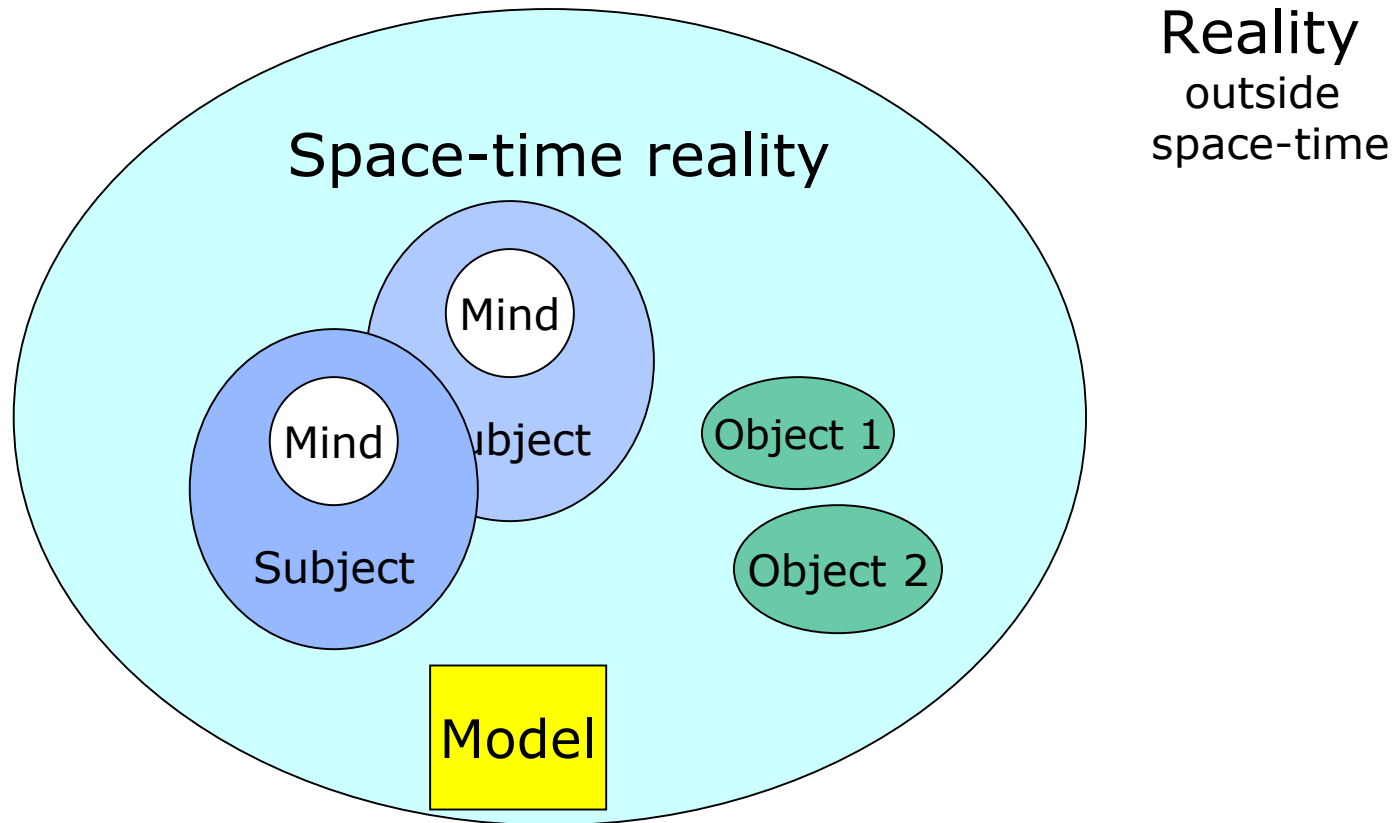


Where are Universals?

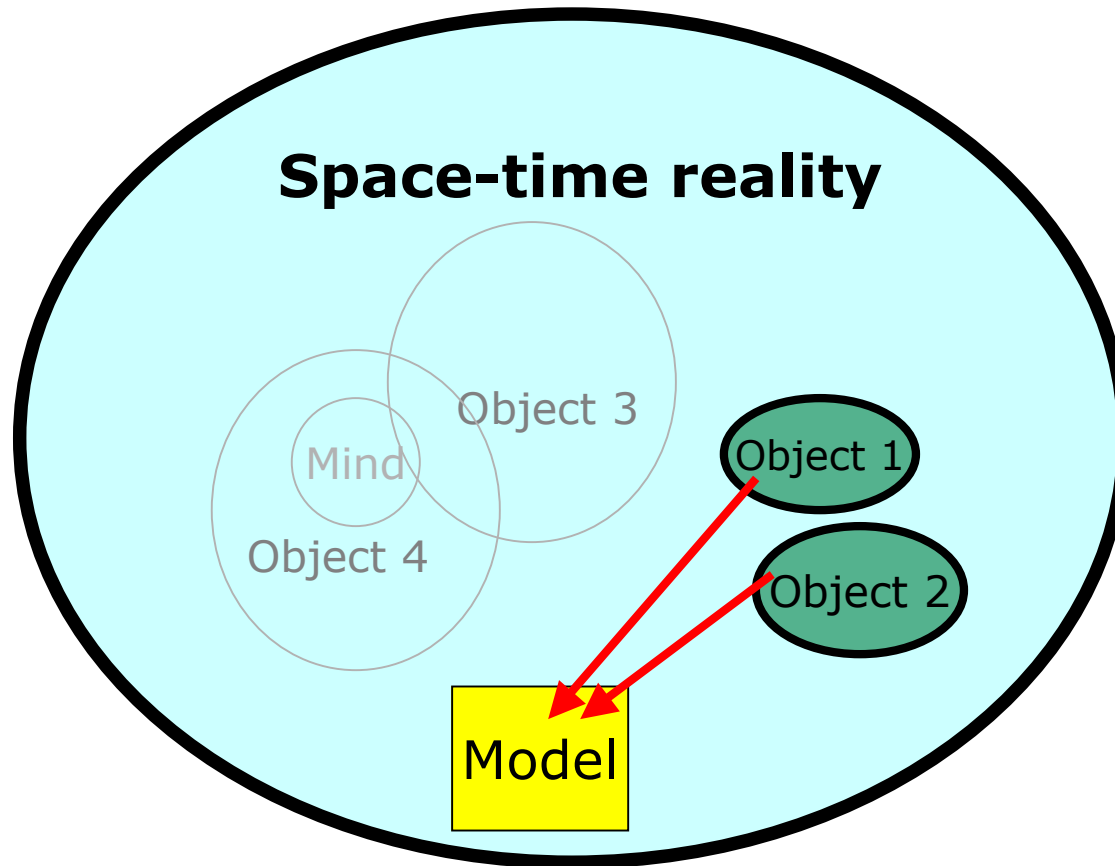


Universals only based on the space-time objects (instances) seem to give an incomplete picture.

Models of the Real World (→Ontologies)

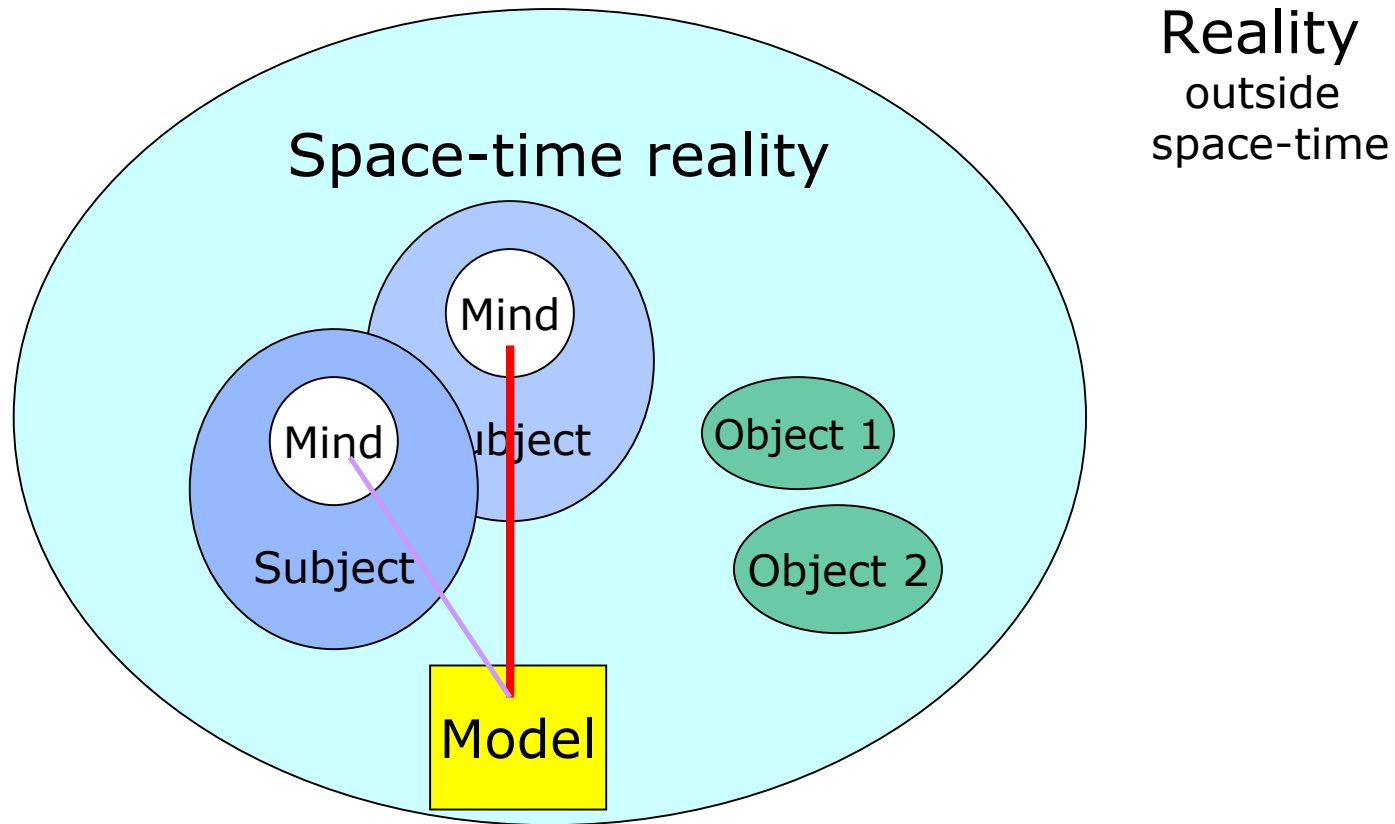


Models of the Real World: Extreme 1



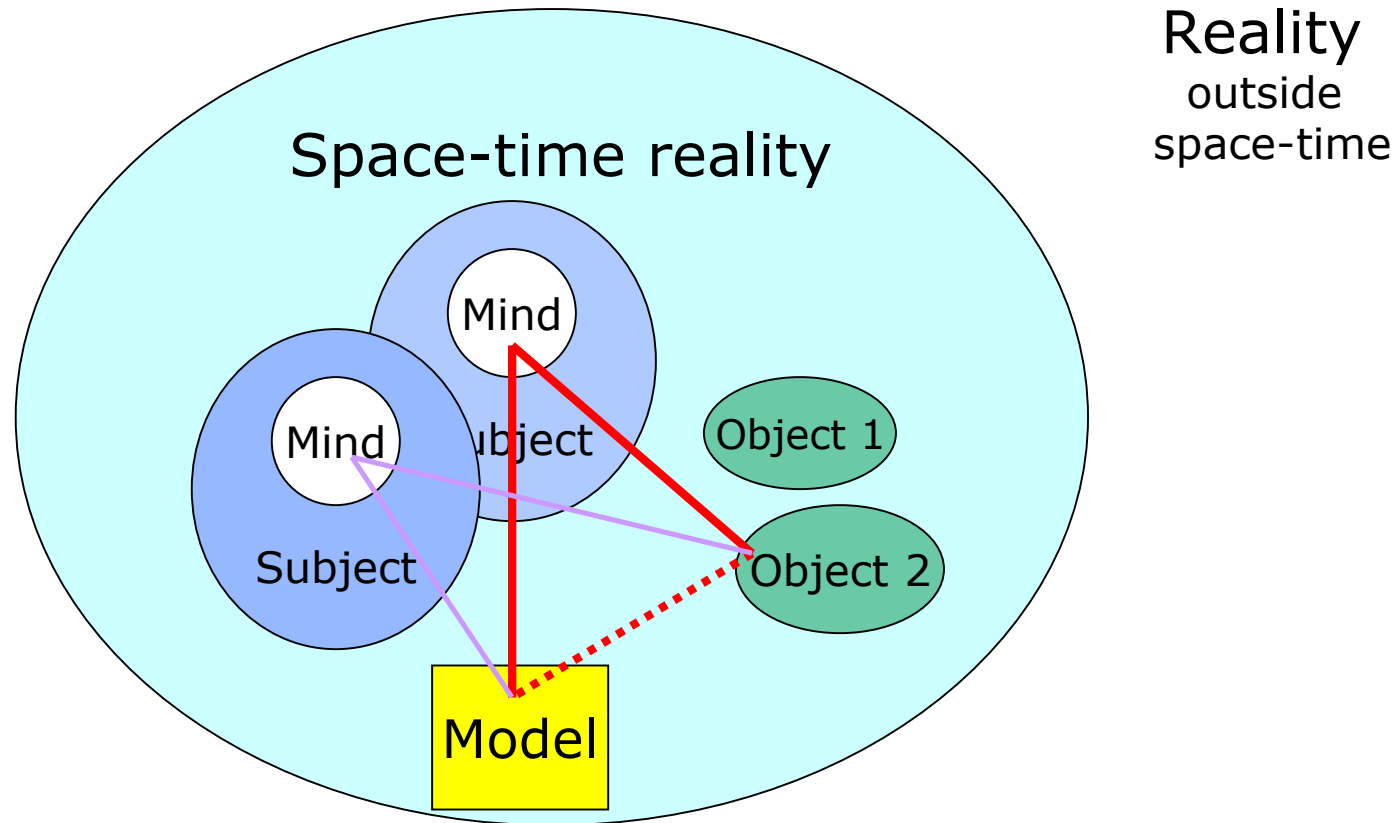
Naive Realism: Your model should be built exactly like the real world.
Anything else is hokum.

Models of the Real World: Extreme 2



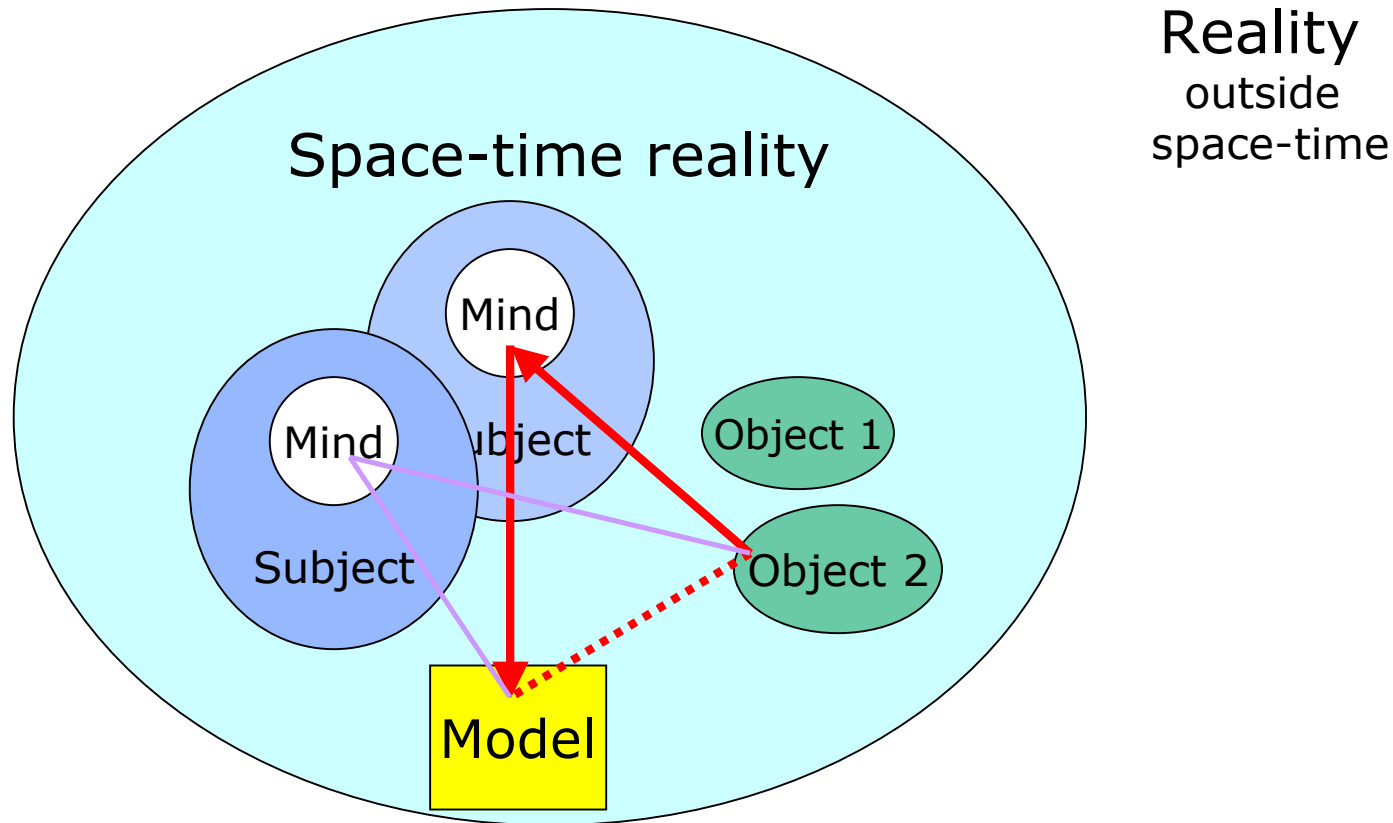
Radical Conceptualism: Models express concepts of human minds.
That's it.

Models of the Real World: Semiotic Triangle



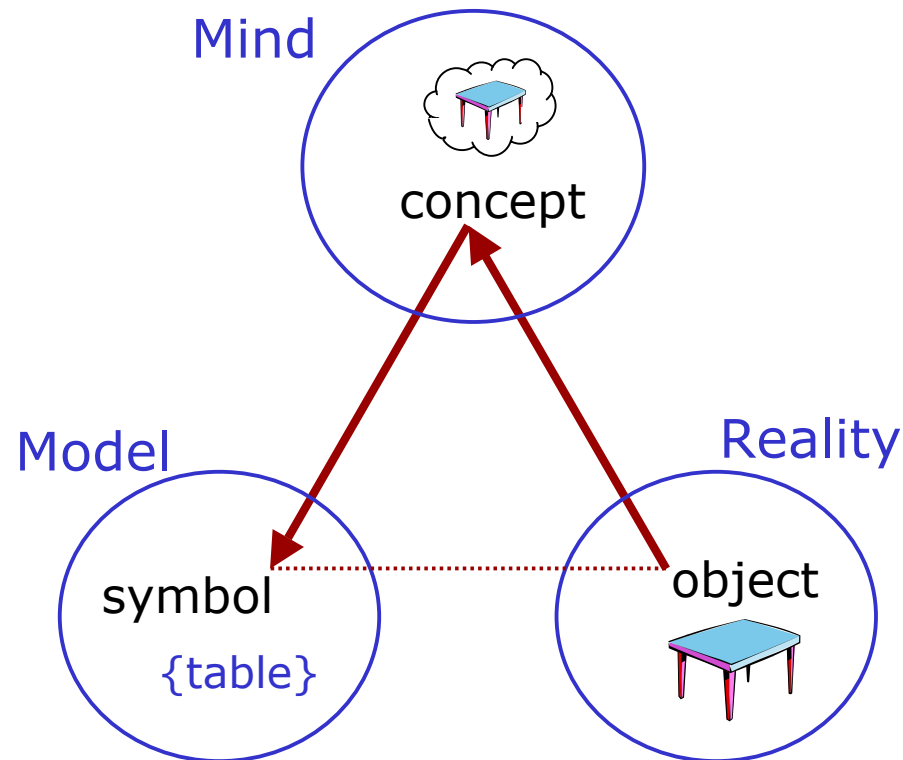
"Realistic" Conceptualism:
The **Semiotic Triangle** links concepts in minds with symbols in models and with the represented objects.

Models of the Real World: Semiotic Triangle



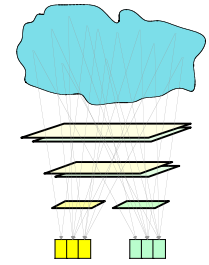
Interpretive approach:
The mind **interpretes** reality.
Models then follow the concepts of the mind.

Models of the Real World: Semiotic Triangle

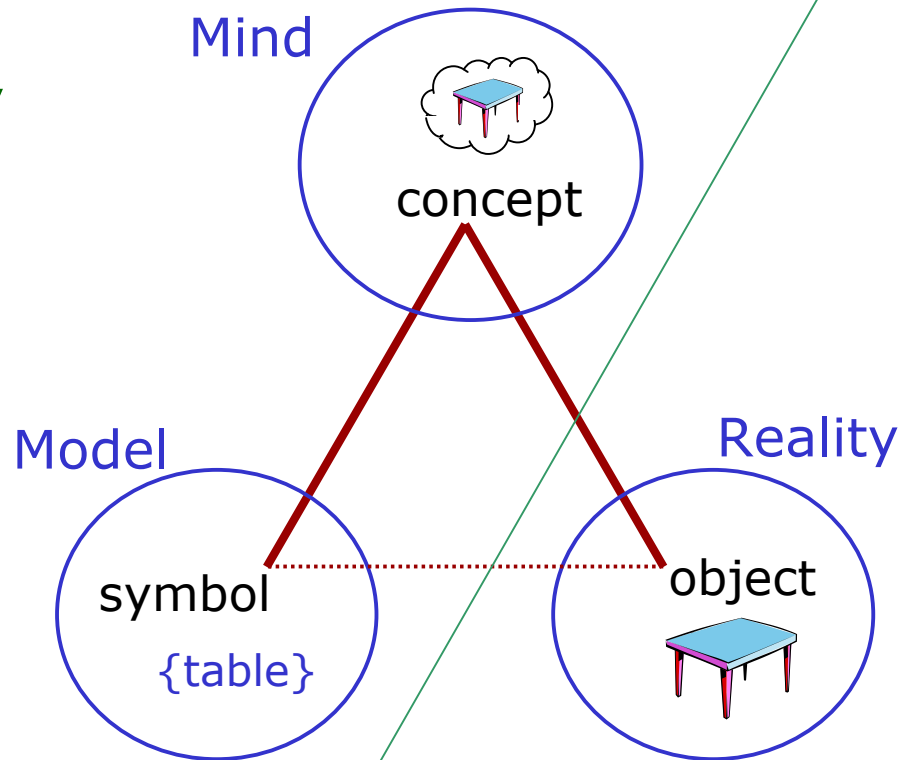


No direct relation between
symbol and object
→ Ogden / Richards (1923)

Models of the Real World: Semiotic Triangle

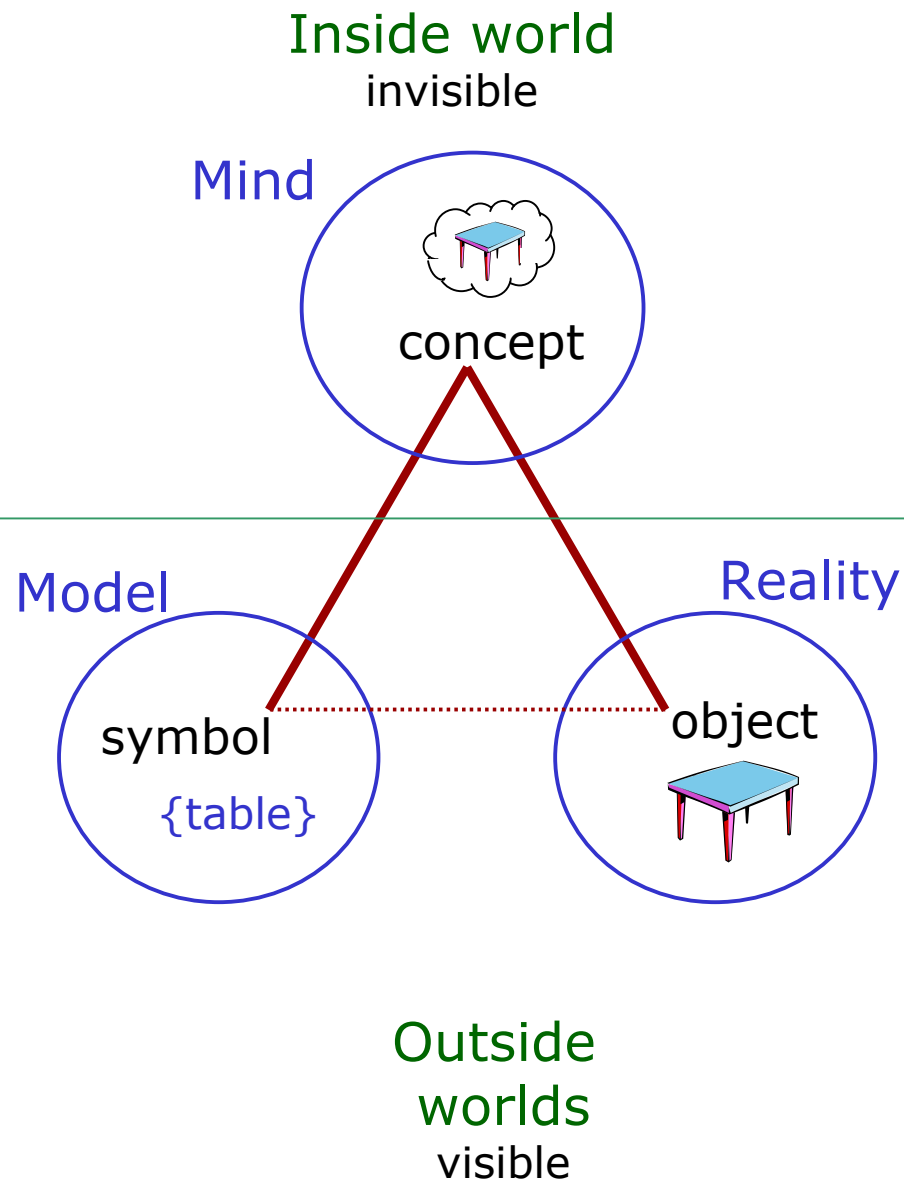


Secondary
worlds
reduced
information

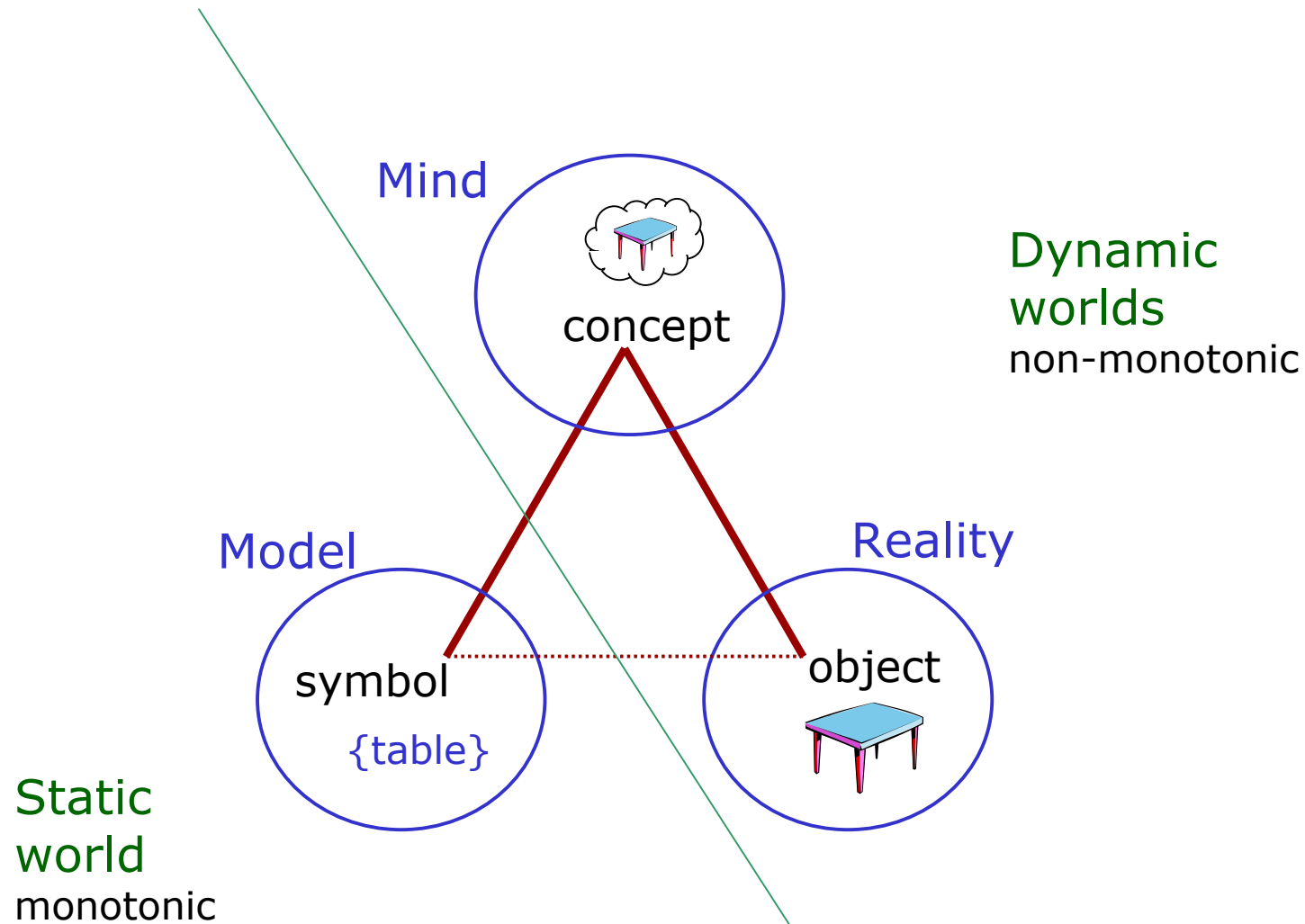


Primary
world
full information

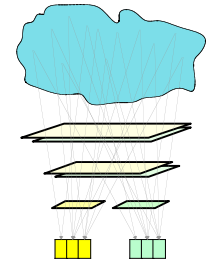
Models of the Real World: Semiotic Triangle



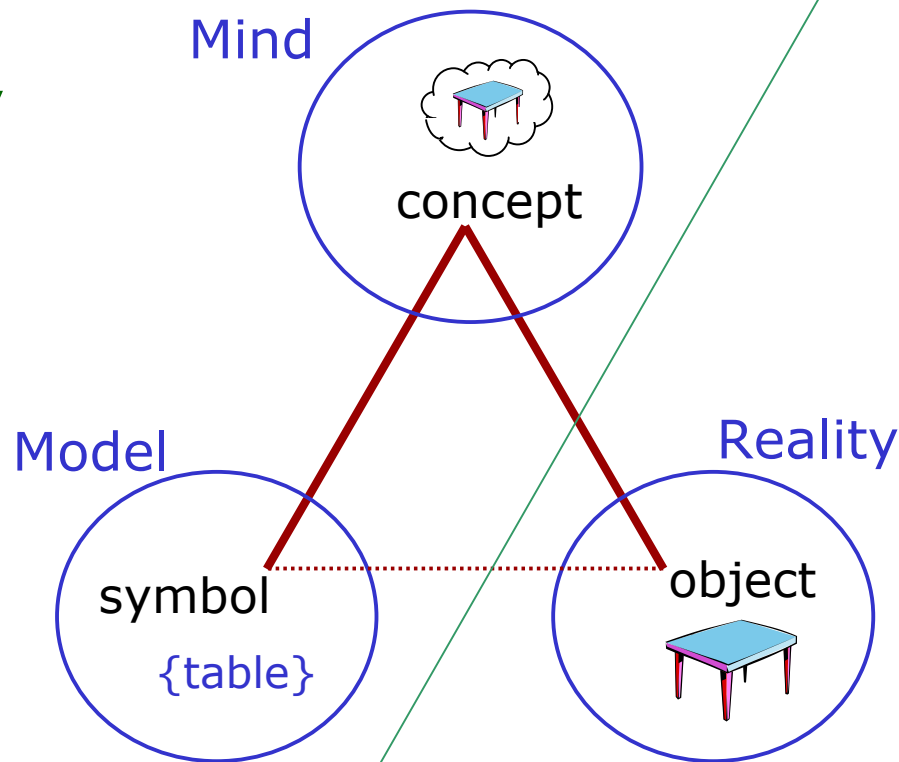
Models of the Real World: Semiotic Triangle



Models of the Real World: Semiotic Triangle



Secondary
worlds
reduced
information



Primary
world
full information

Conclusion: Minds and Models never cover the full information of reality

Thank you for your attention