

# Reality and Abstraction

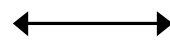
## A Look at Different Models

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



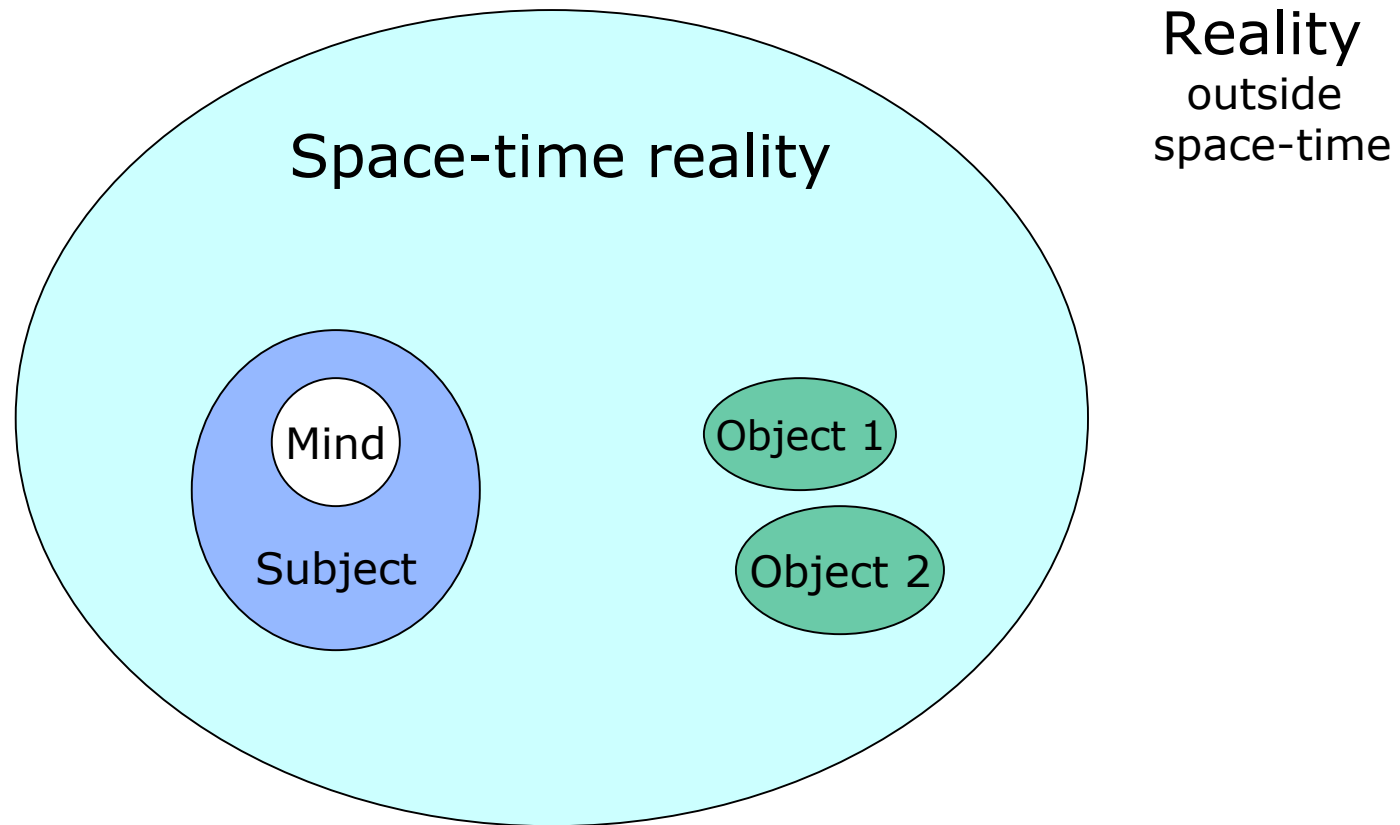
**Solipsism**

All is in my mind

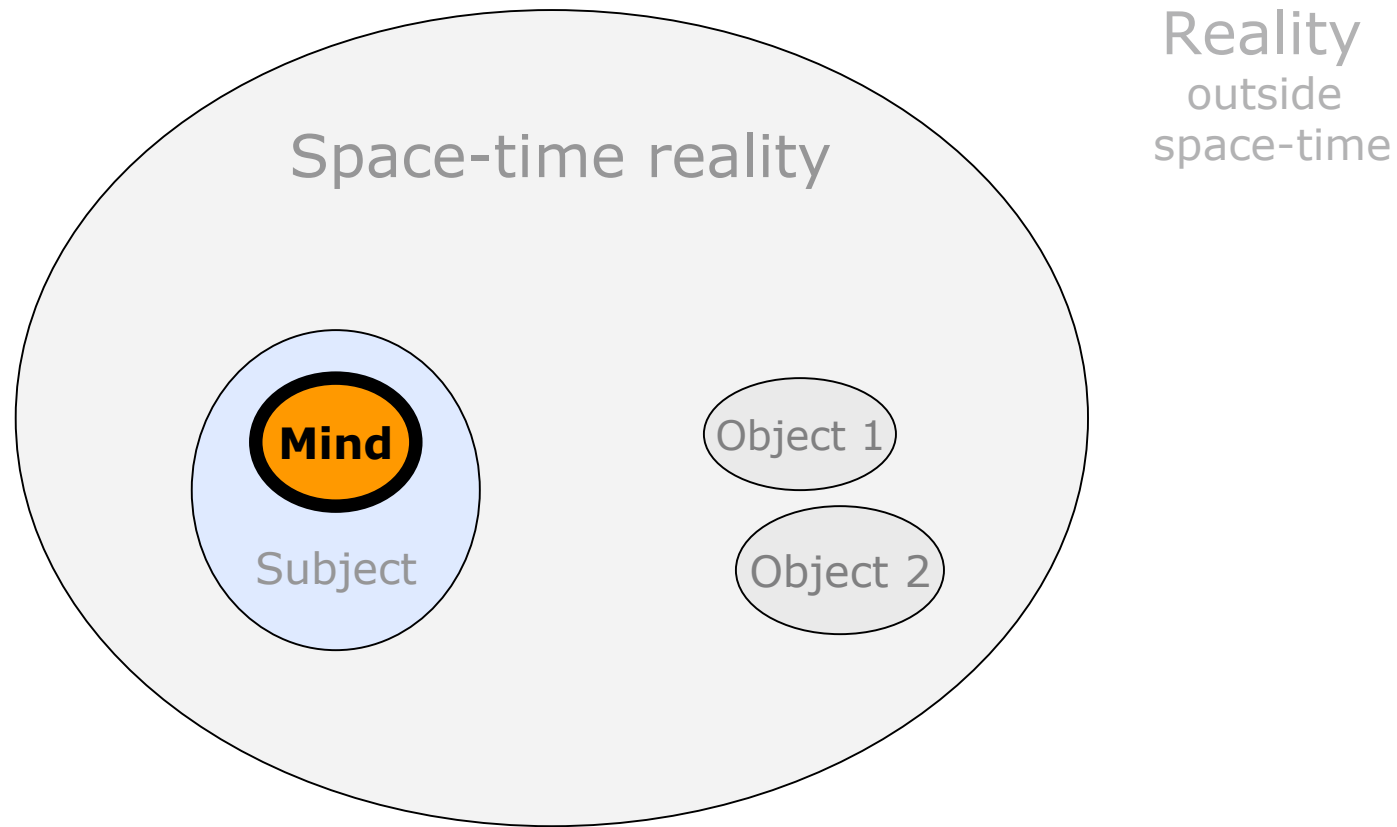
**Naive Realism**

Only material objects exist

# Scenery for the Realism-Debate

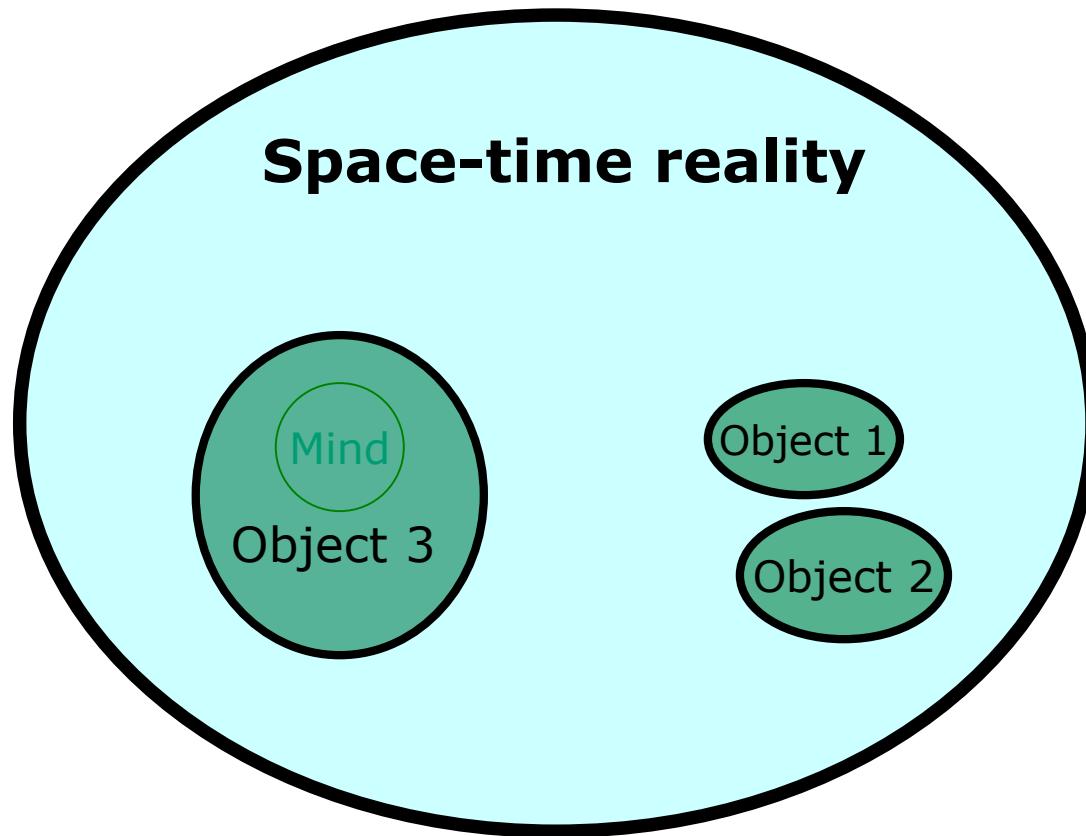


# Extreme 1: Solipsism



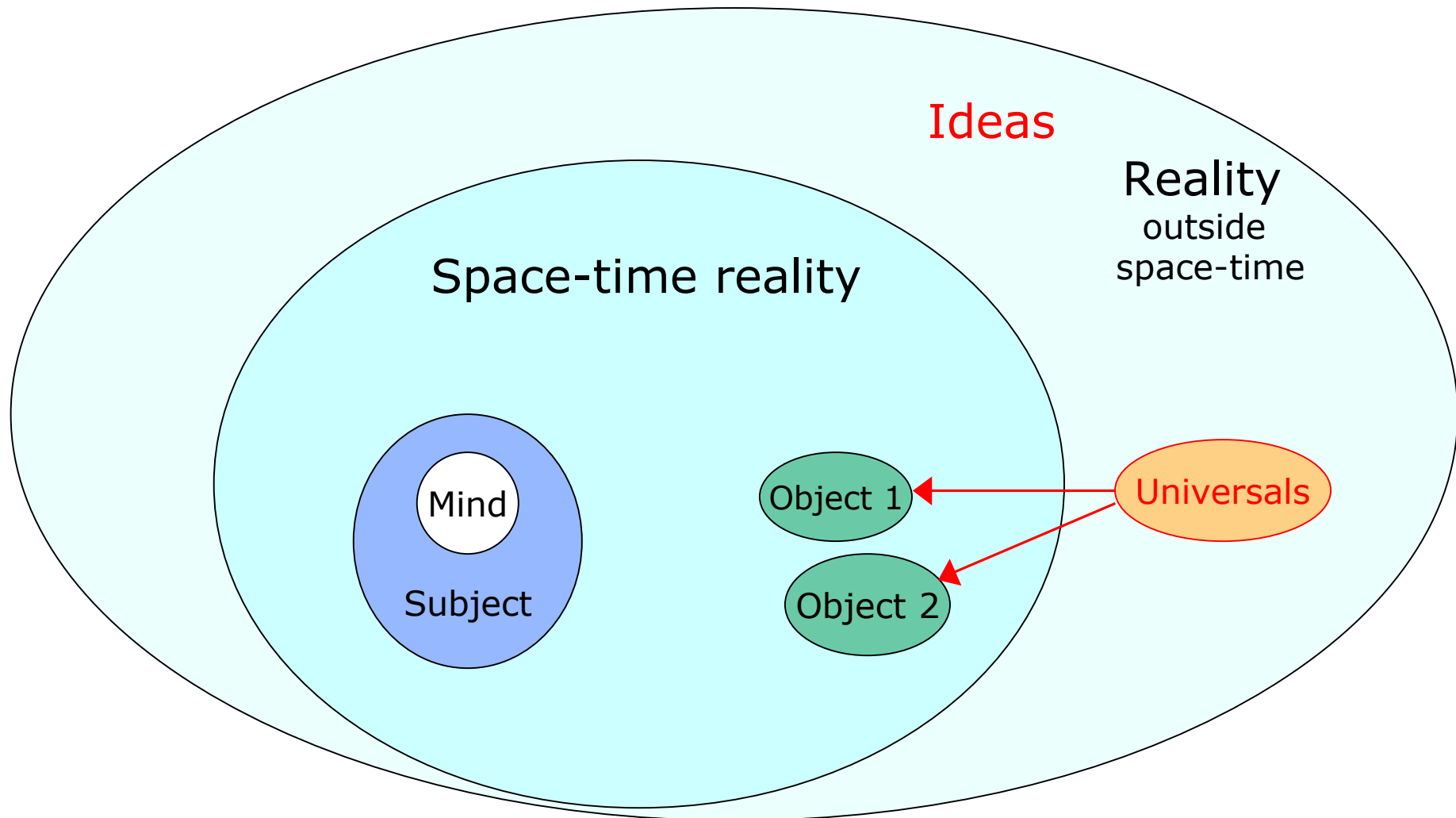
The world exists only in my mind.  
Reality is an illusion.

# Extreme 2: Naive Realism



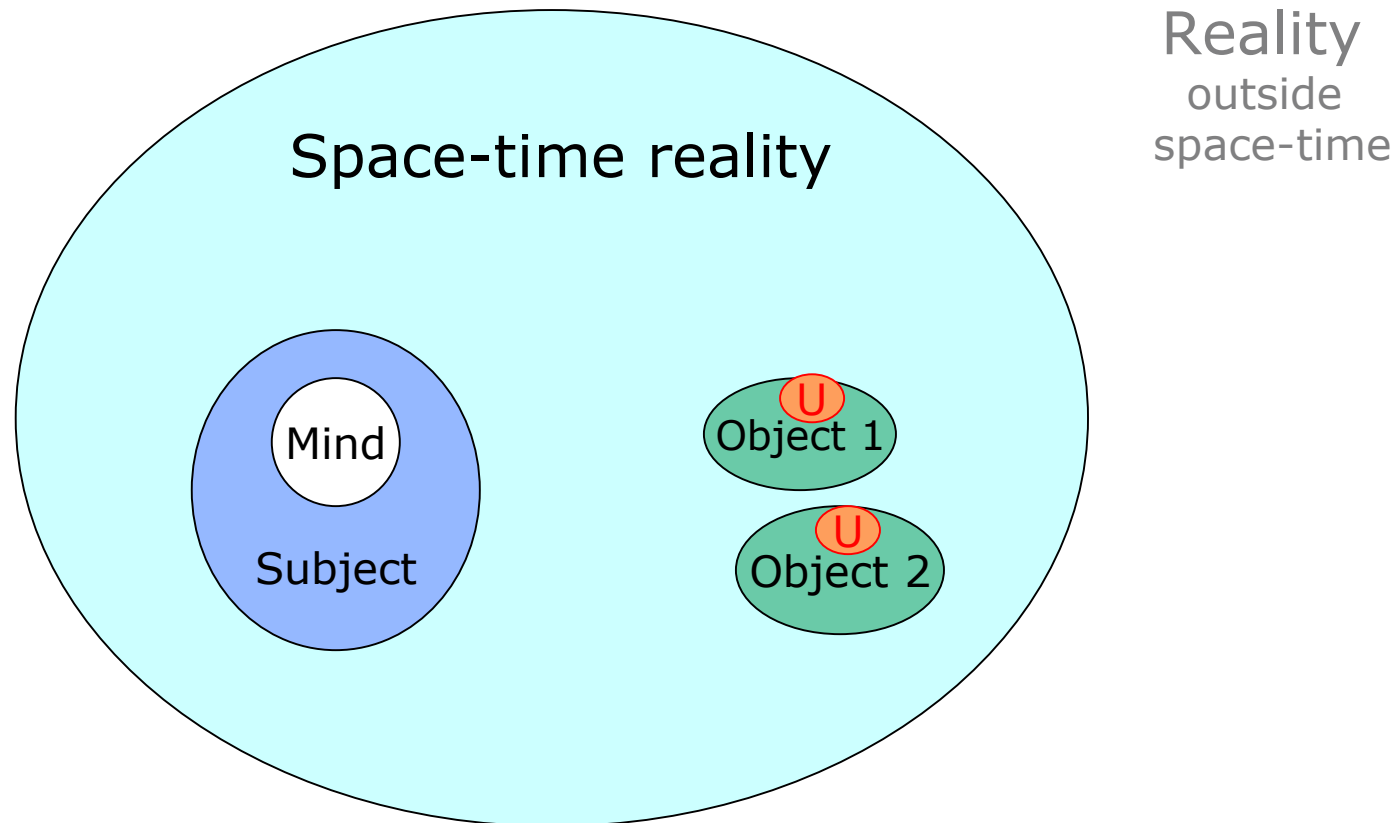
Reality consists of material objects. A subject is just another object.  
What is in my mind is not important, important is what exists in reality.

# "Platonian" Realism



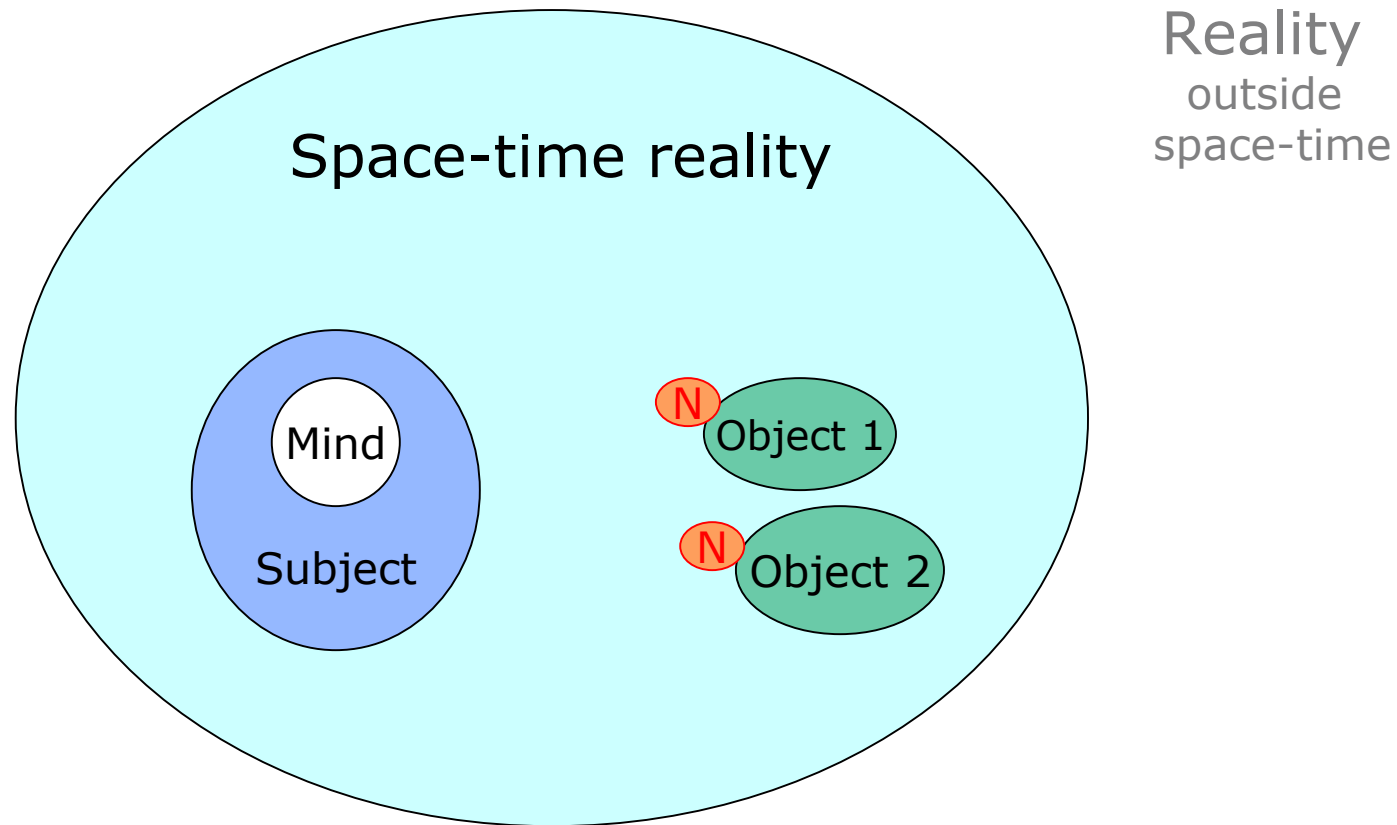
Material objects are created by the ideas behind them (universals). Our Space-Time Reality is just a shadow of the more real ideal world.  
→ *universalia ante rem.*

# "Aristotelian" Realism



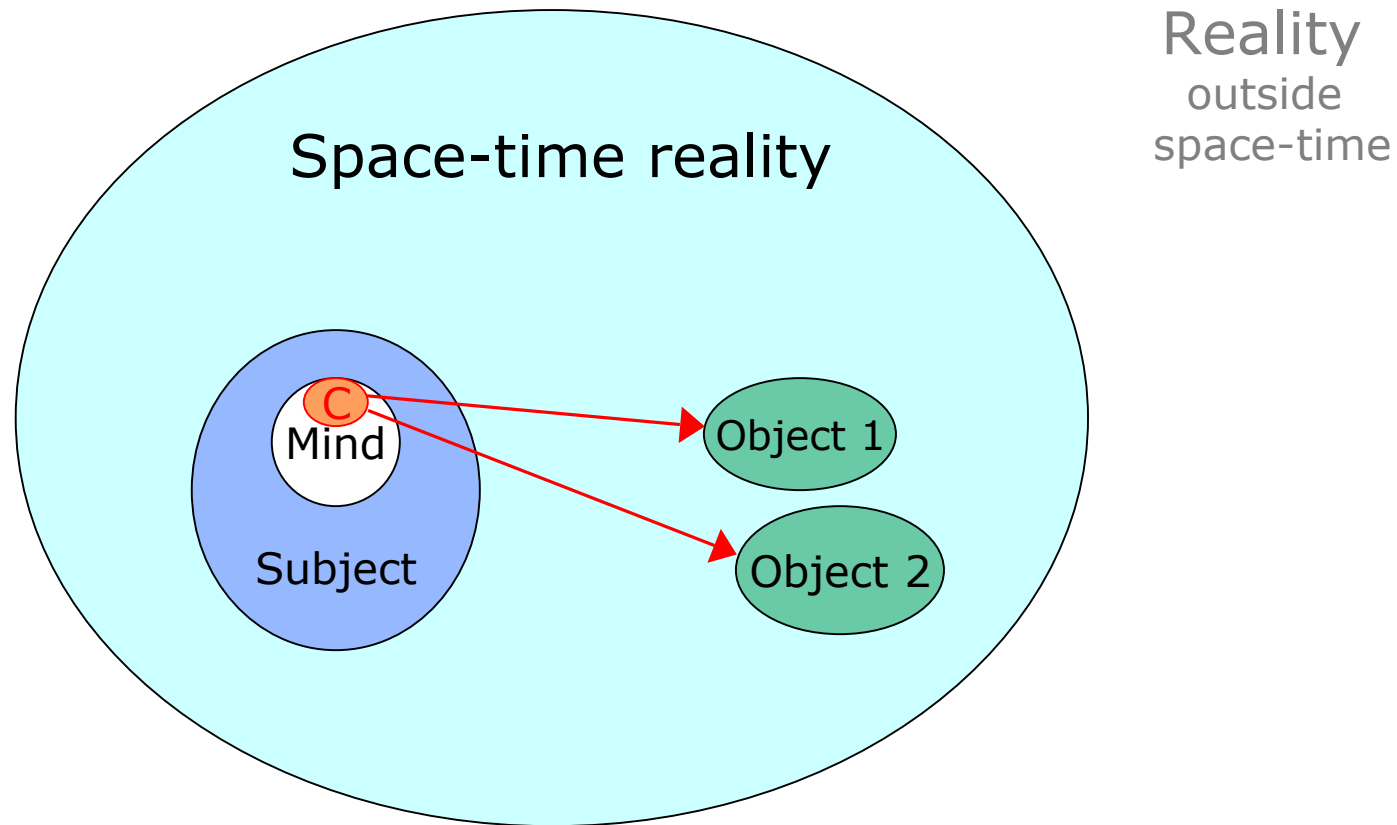
The common core (universal **U**) in similar objects (individuals) is part of the objects and not outside of them. → *universalia in rebus*

# 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?

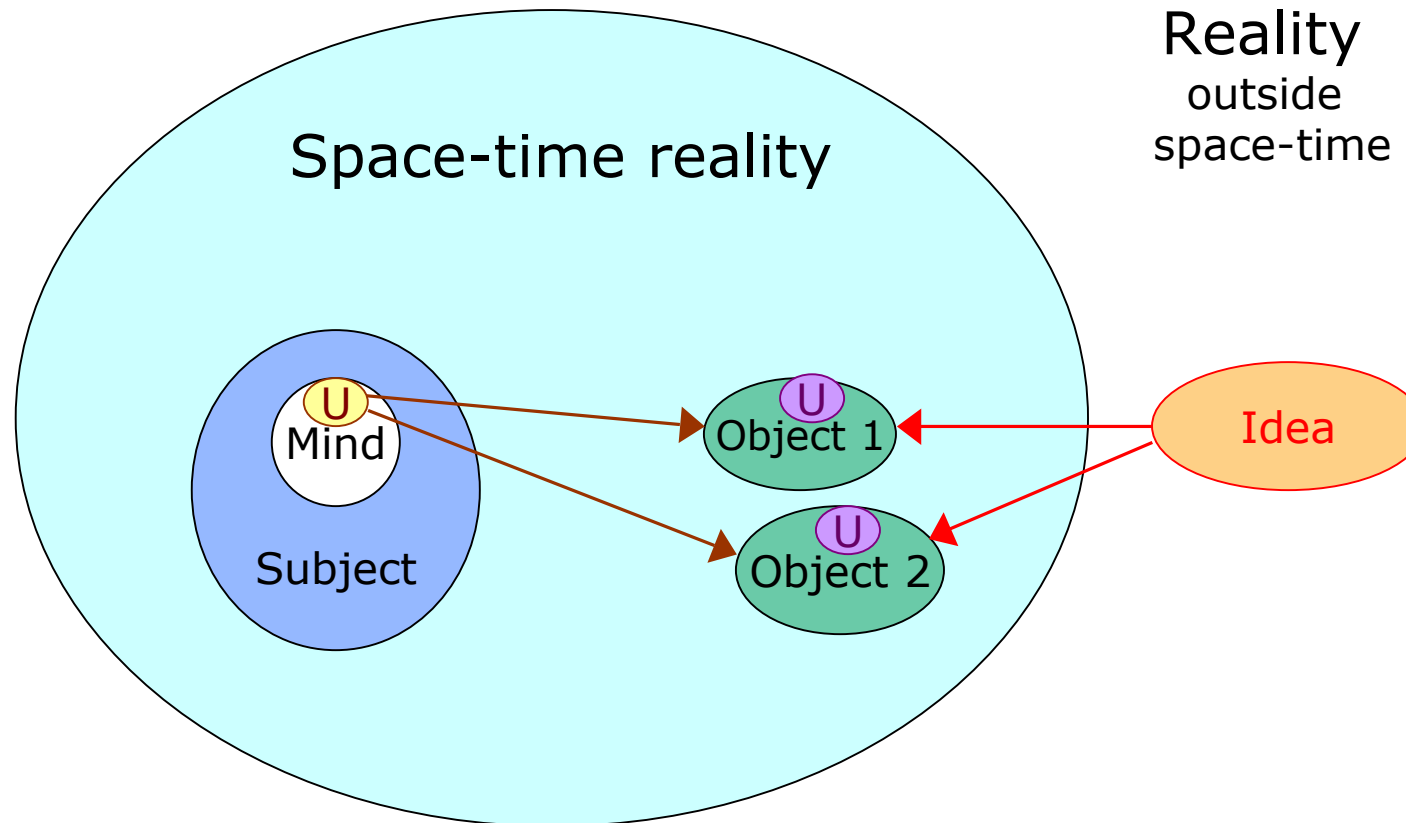
Are such "philosophical" question today still relevant?

Yes!

Our models and ontologies should represent reality

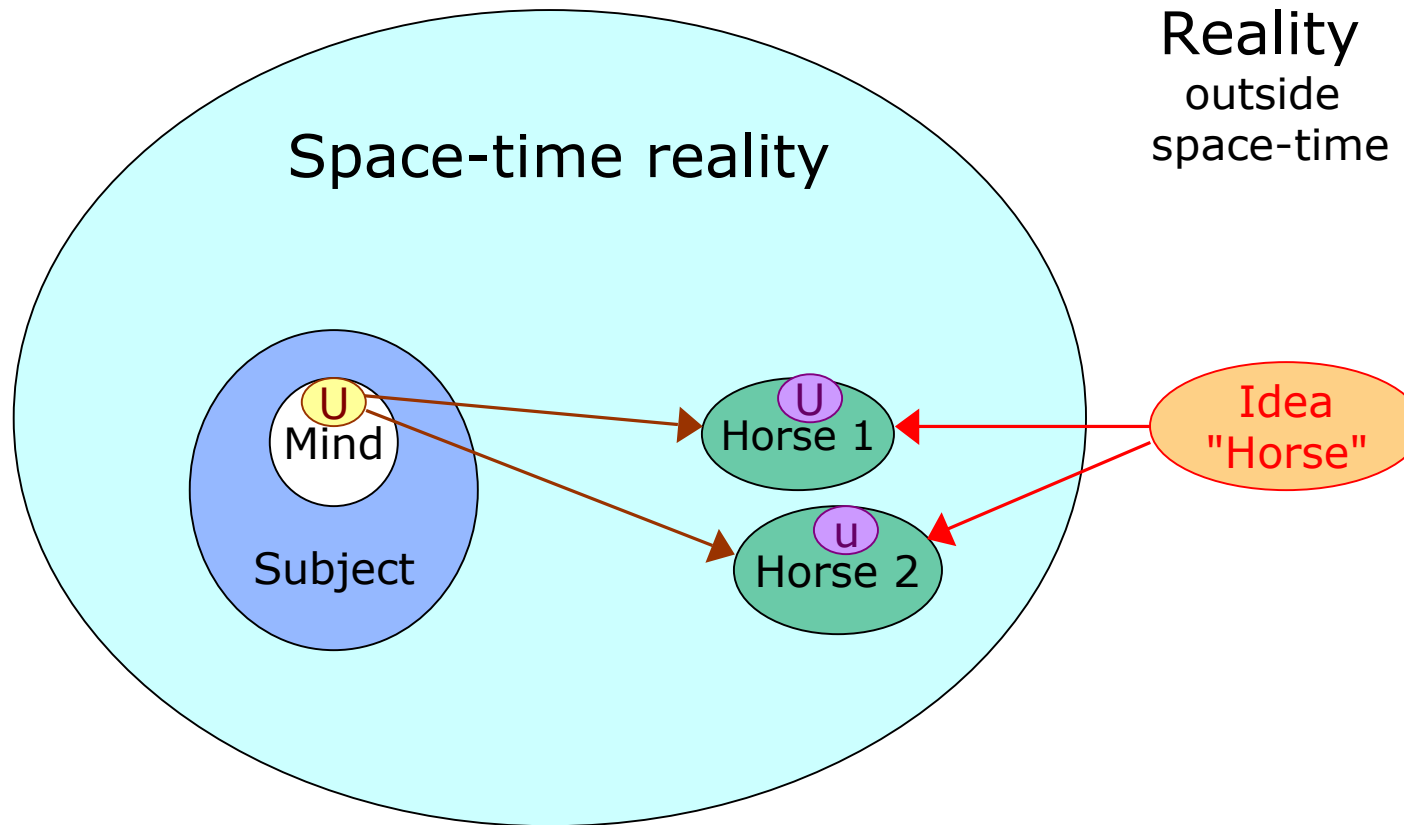
The **link between reality and models** is crucial and  
still not trivial

# Where are Universals? → Several Examples



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

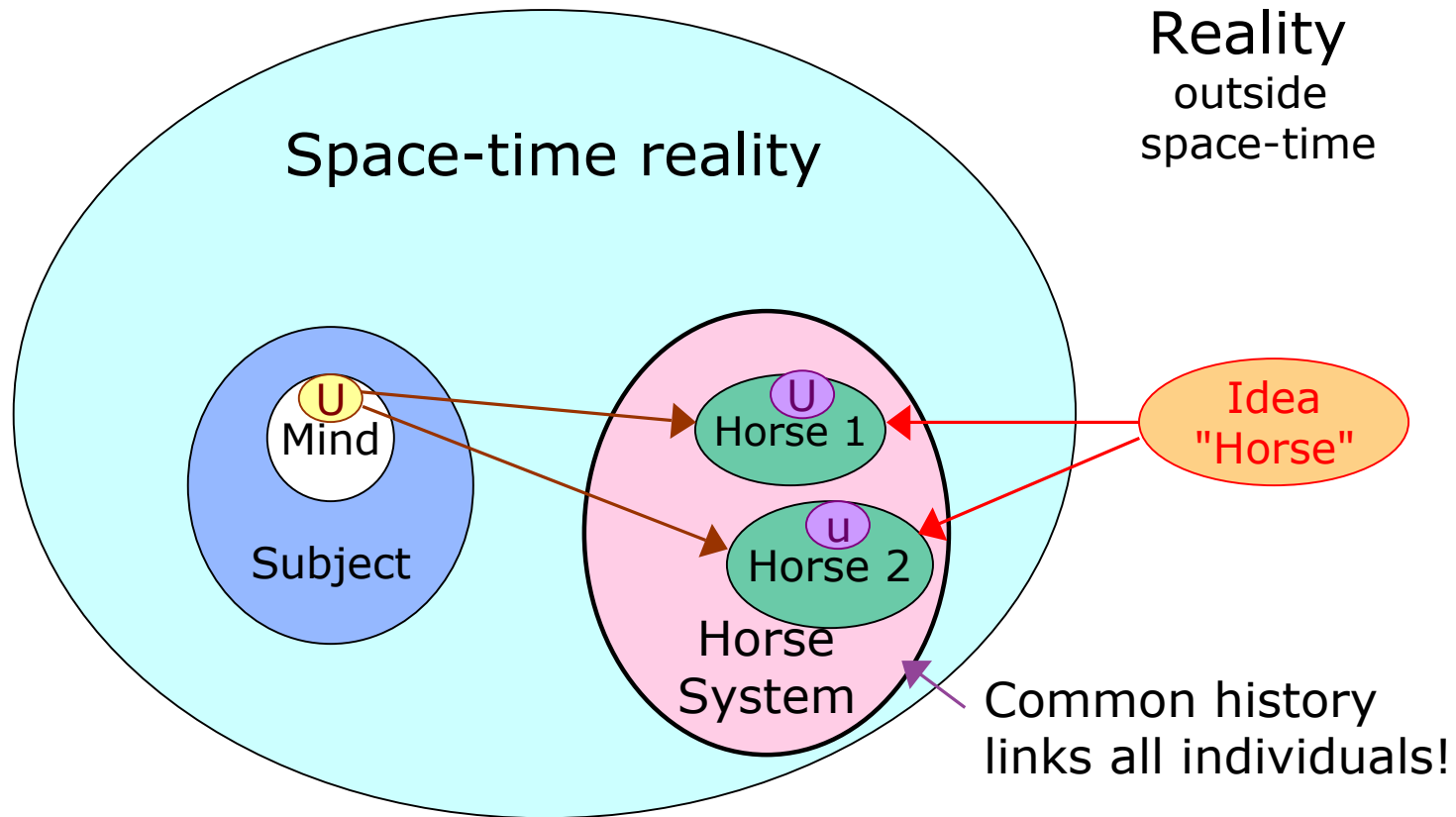
# Where are Universals for Living Systems (Species)?



Where is the "horse"?

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

# Where are Universals for Living Systems (Species)?

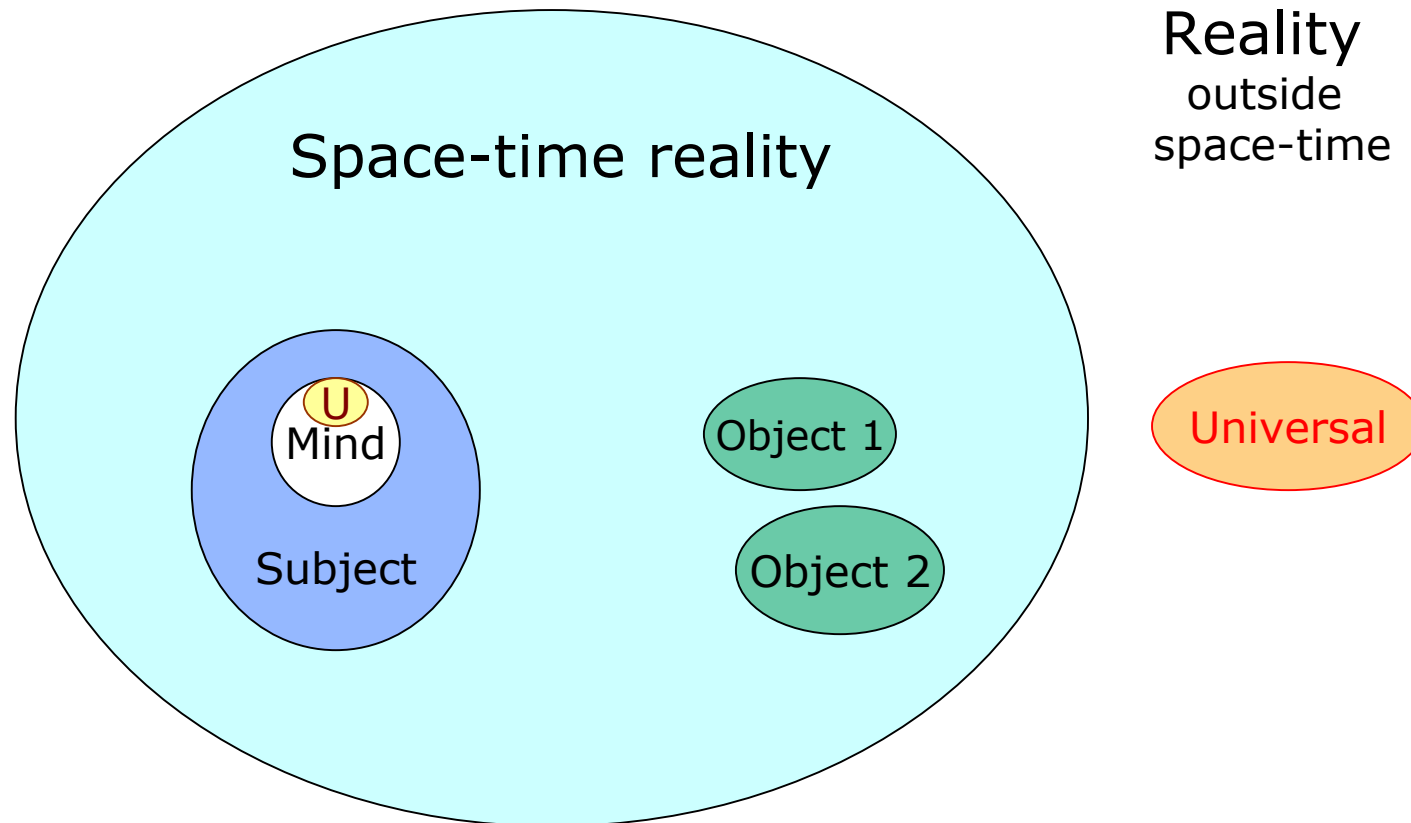


Where is the "horse"?

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

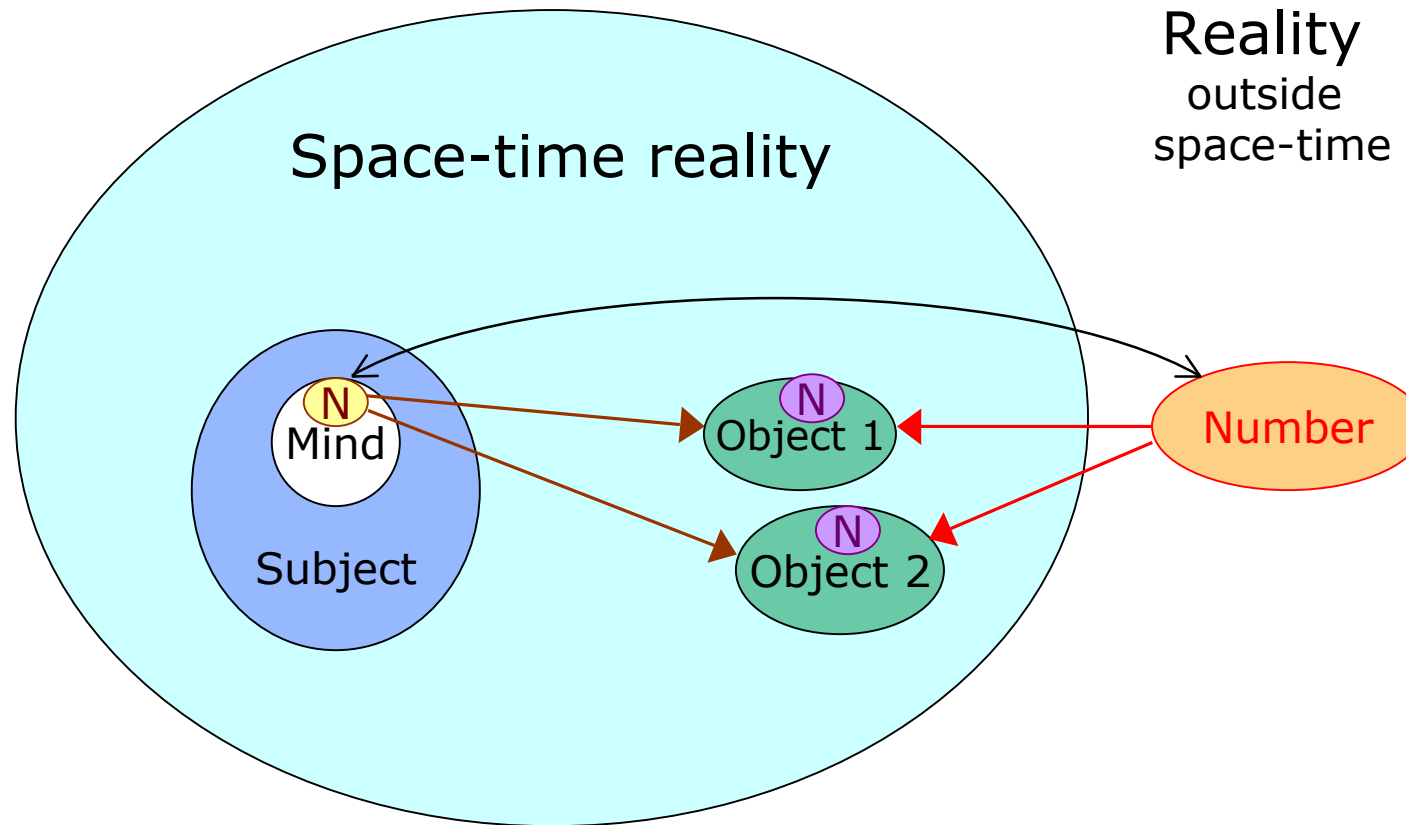
- "Platonian"
- "Aristotelian"
- "Conceptualist"

# Where are Universals for 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"

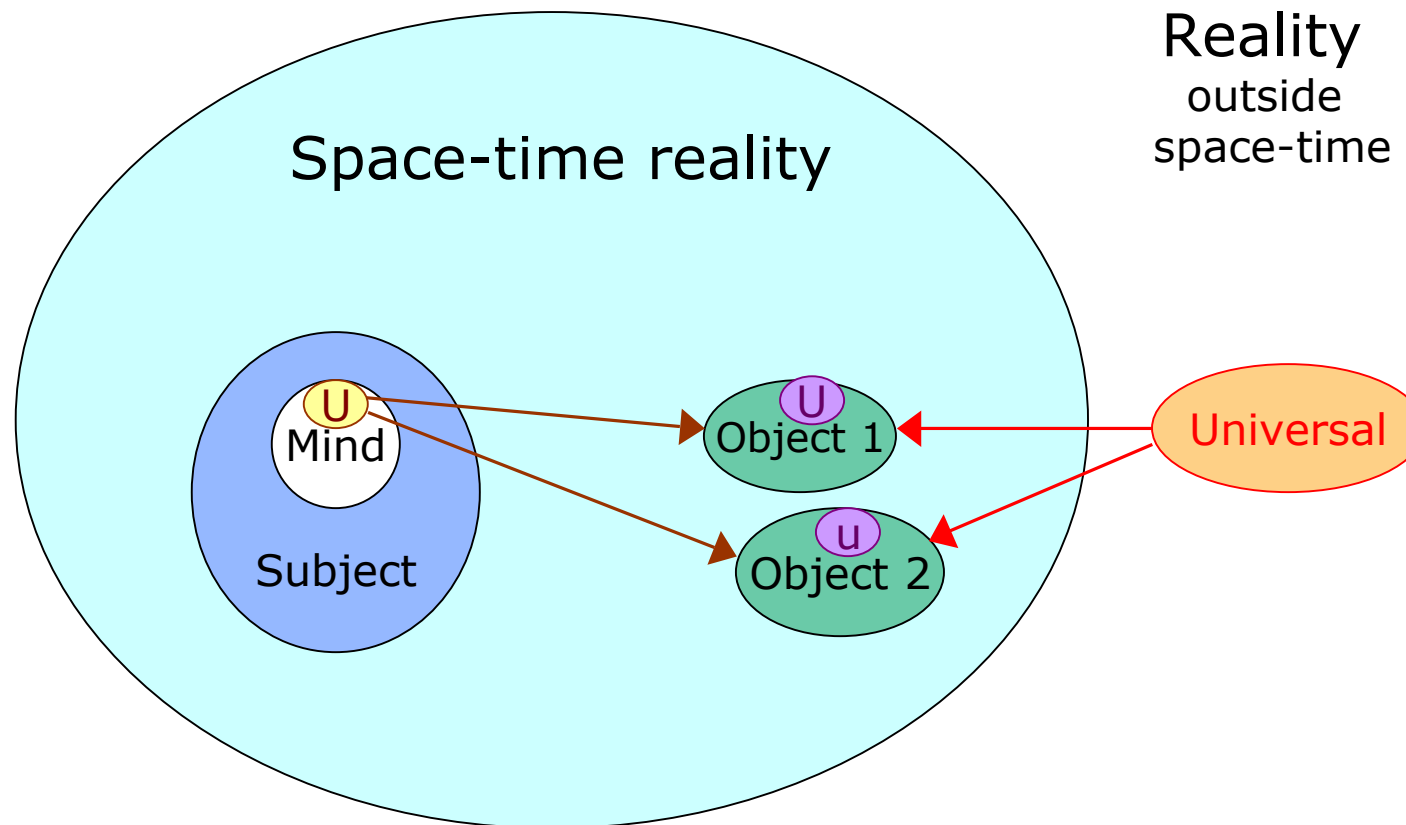
→ Part of the objects

→ "Aristotelian"

→ In the mind of humans

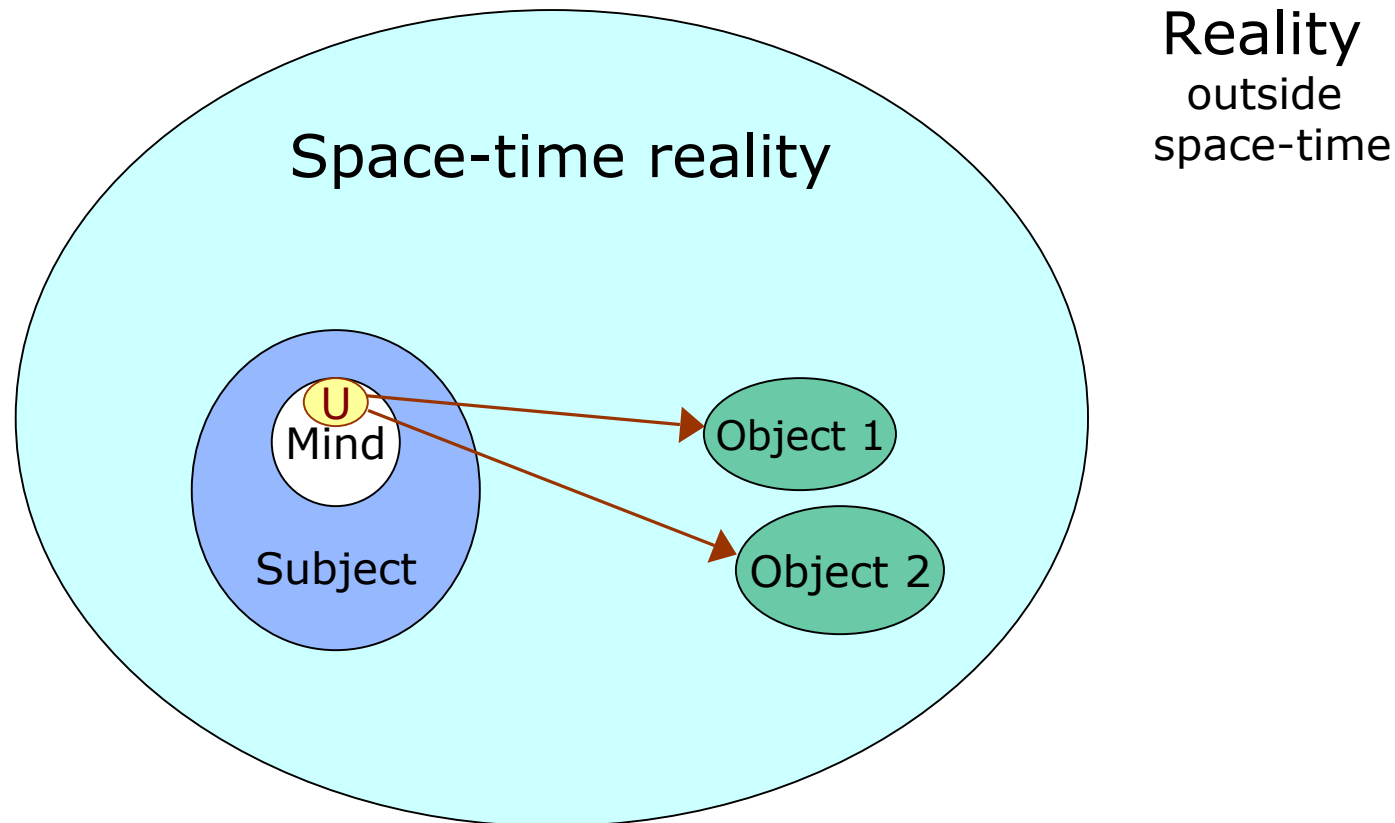
→ "Conceptualist"

# 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"

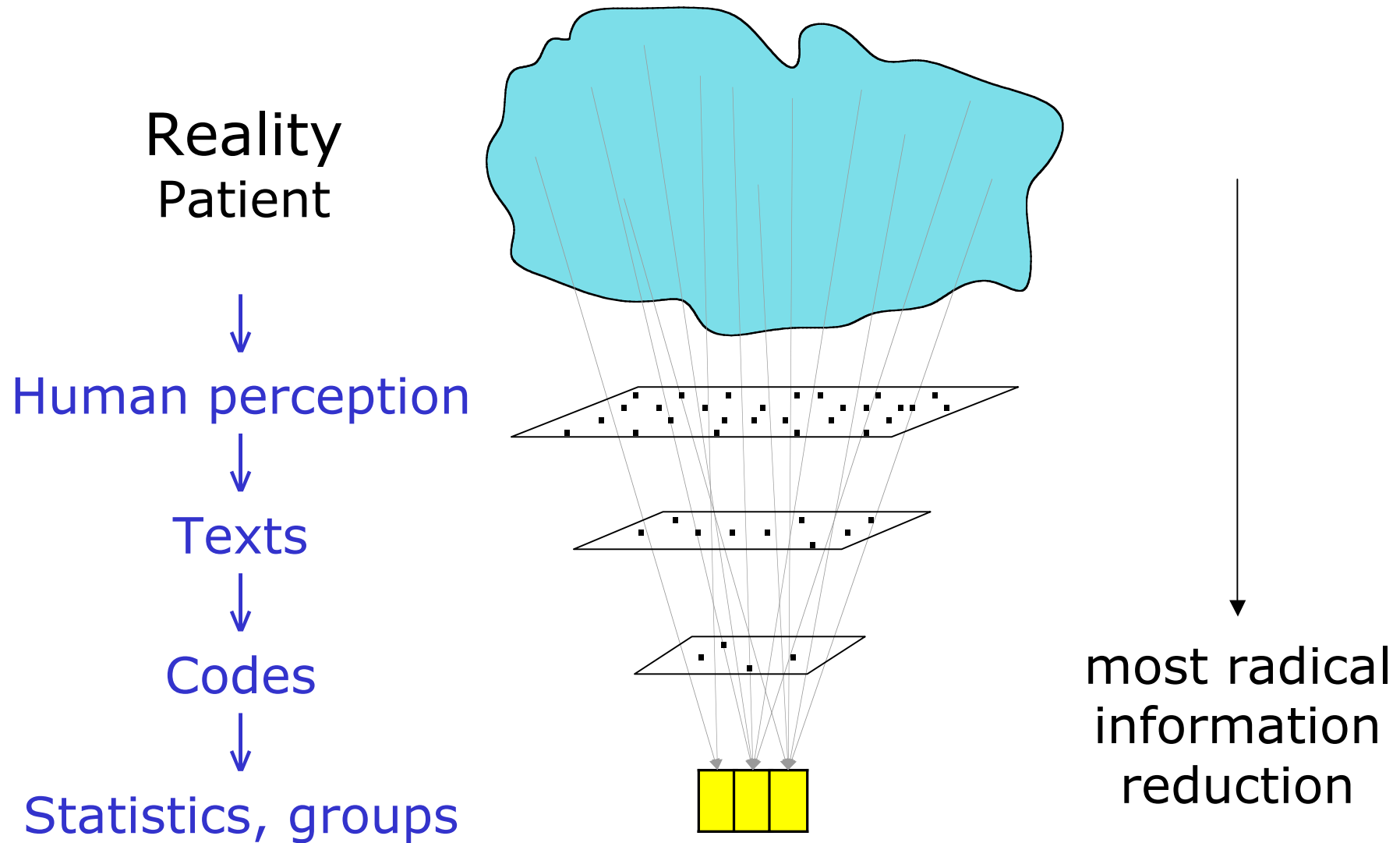
# Where are Universals for Non-material Concepts?



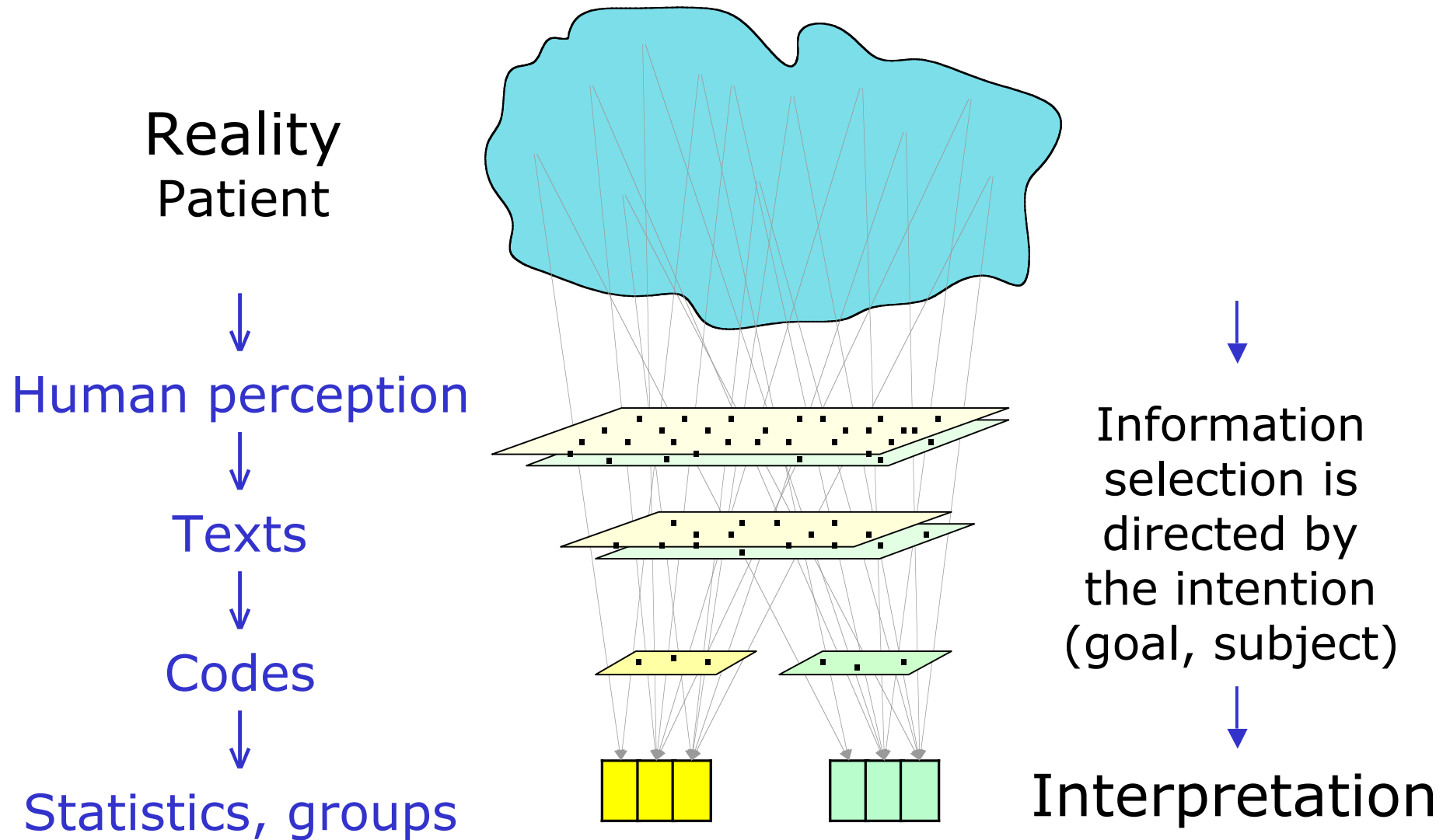
Where is the universal of a certain "diagnosis"?

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

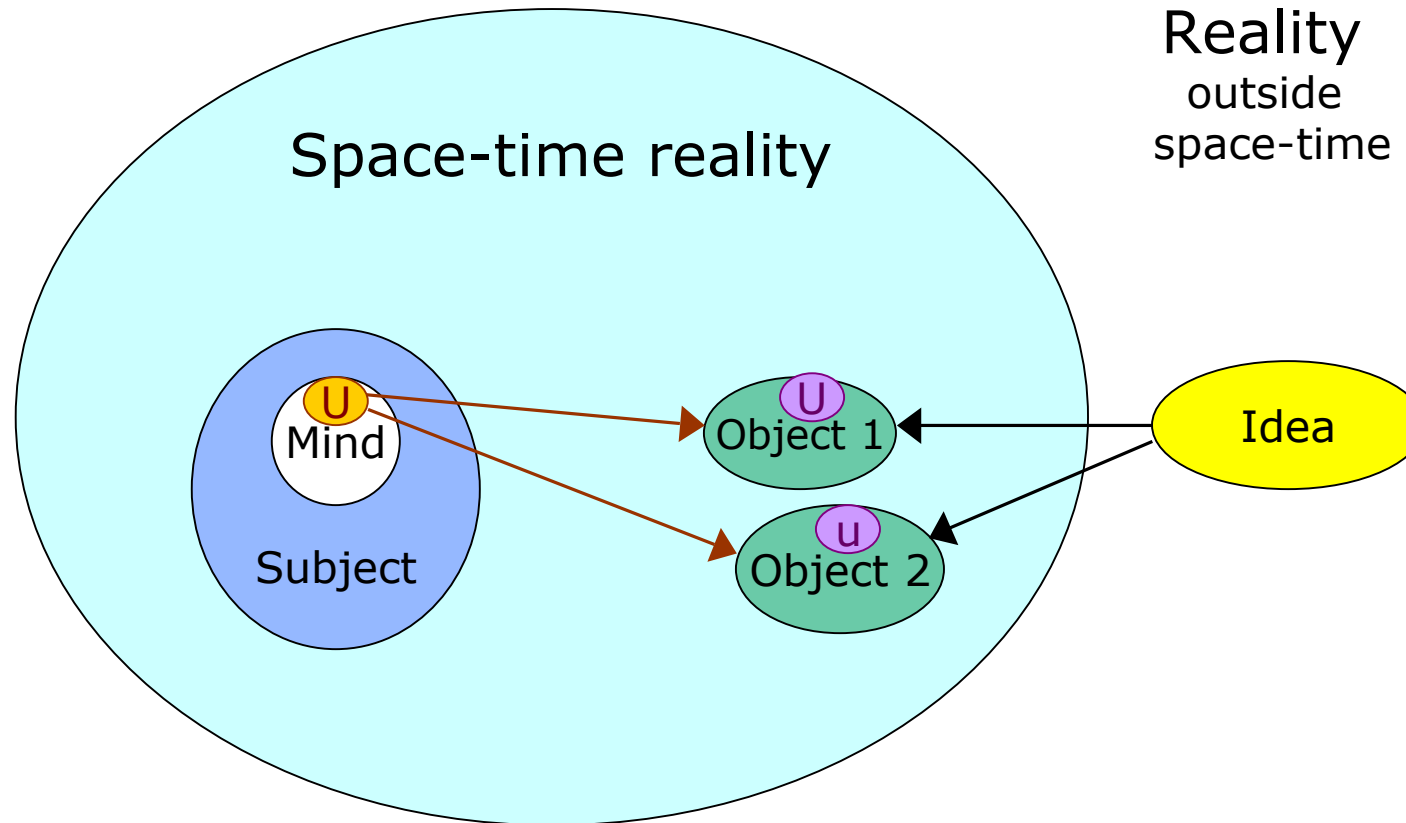
# Our Job: From the Patient to the ICD-10 Code



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

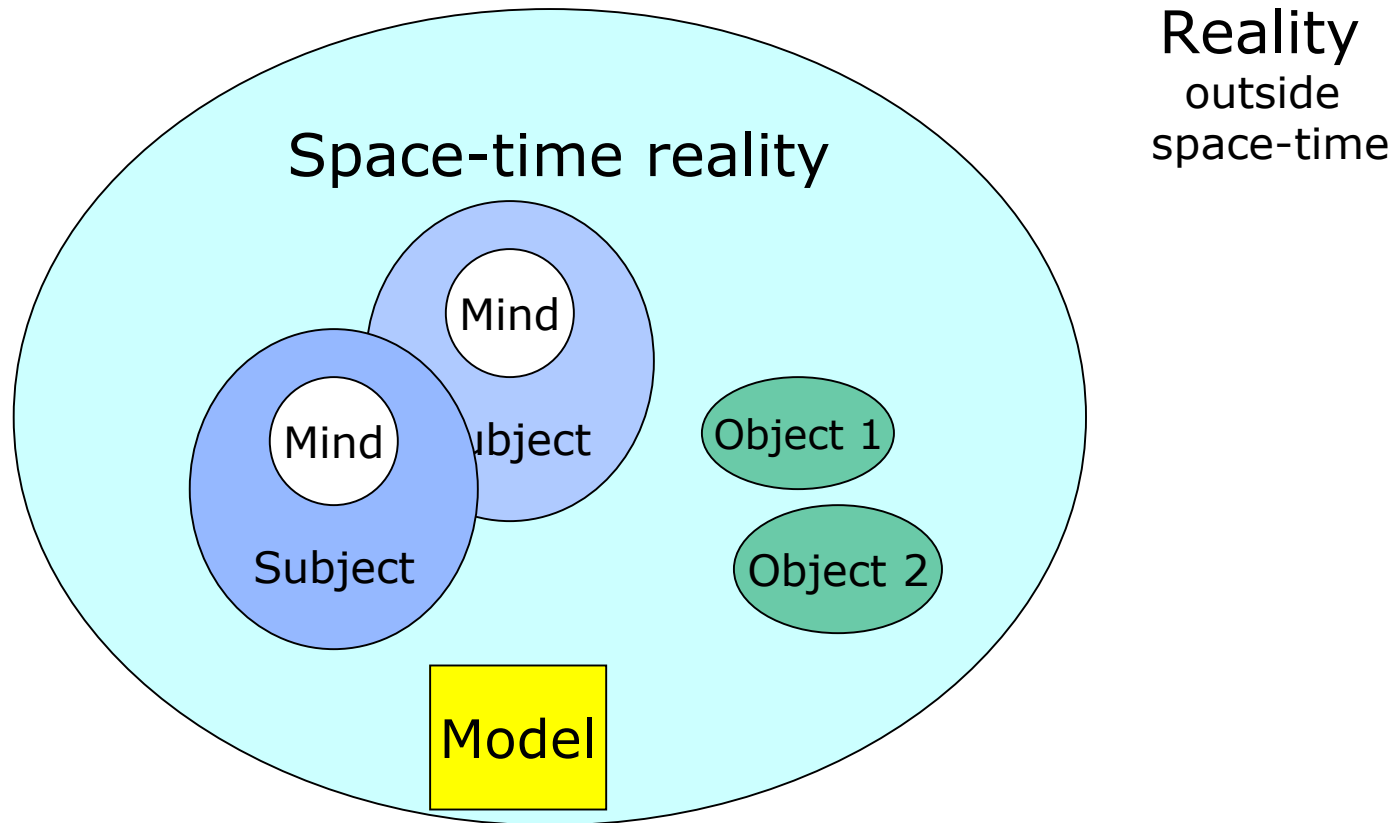


# Where are Universals?

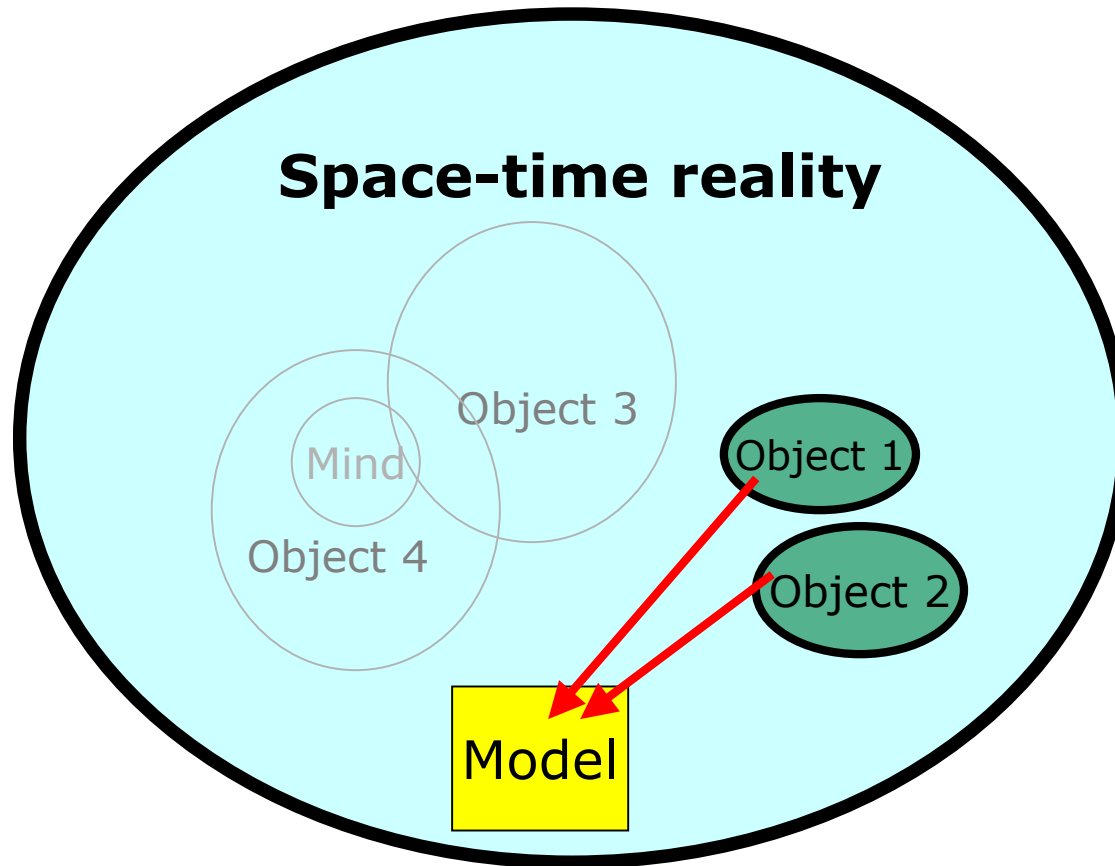


Universals only based on the space-time objects (instances) seem to give an incomplete picture.

# Models of the Real World (→Ontologies)

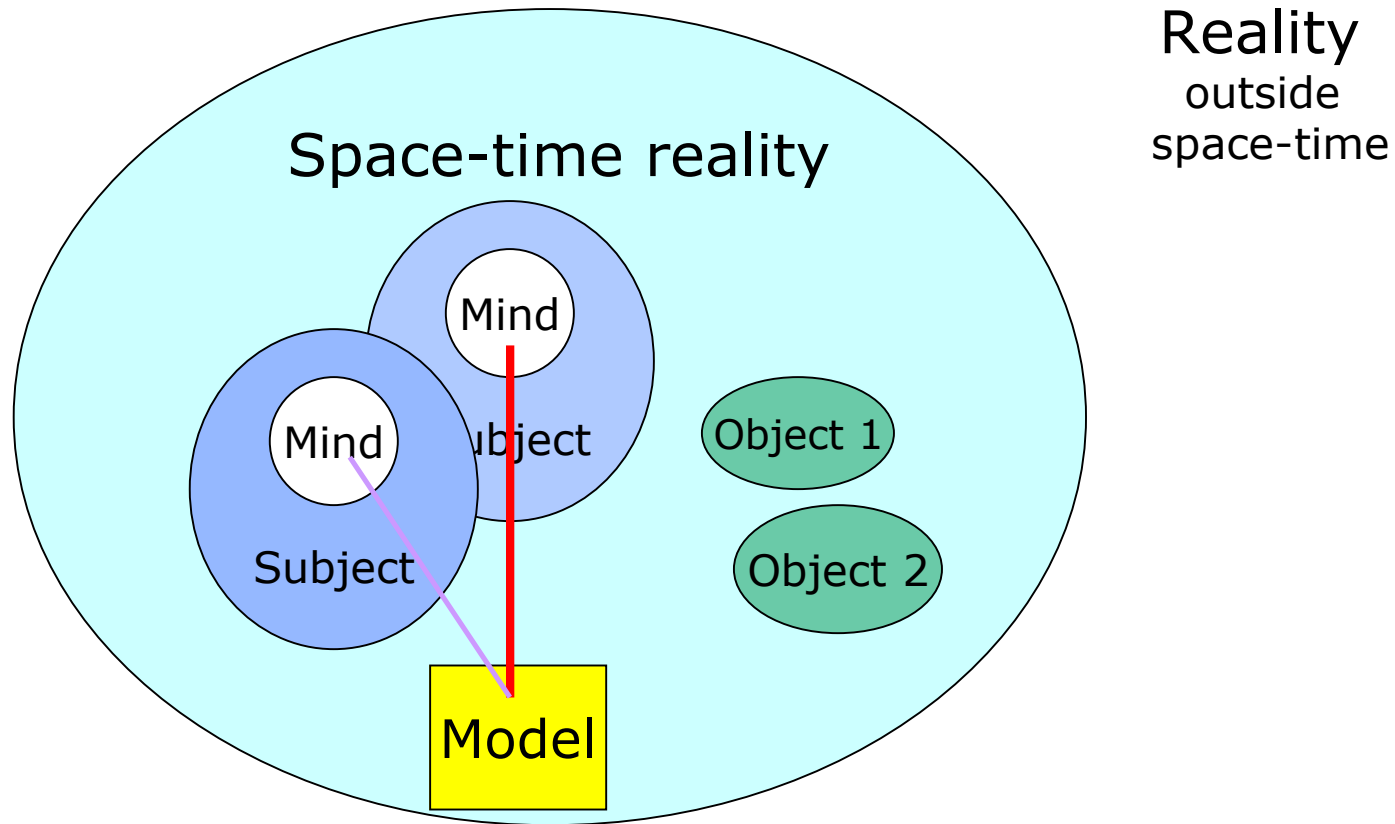


# Models of the Real World: Extreme 1



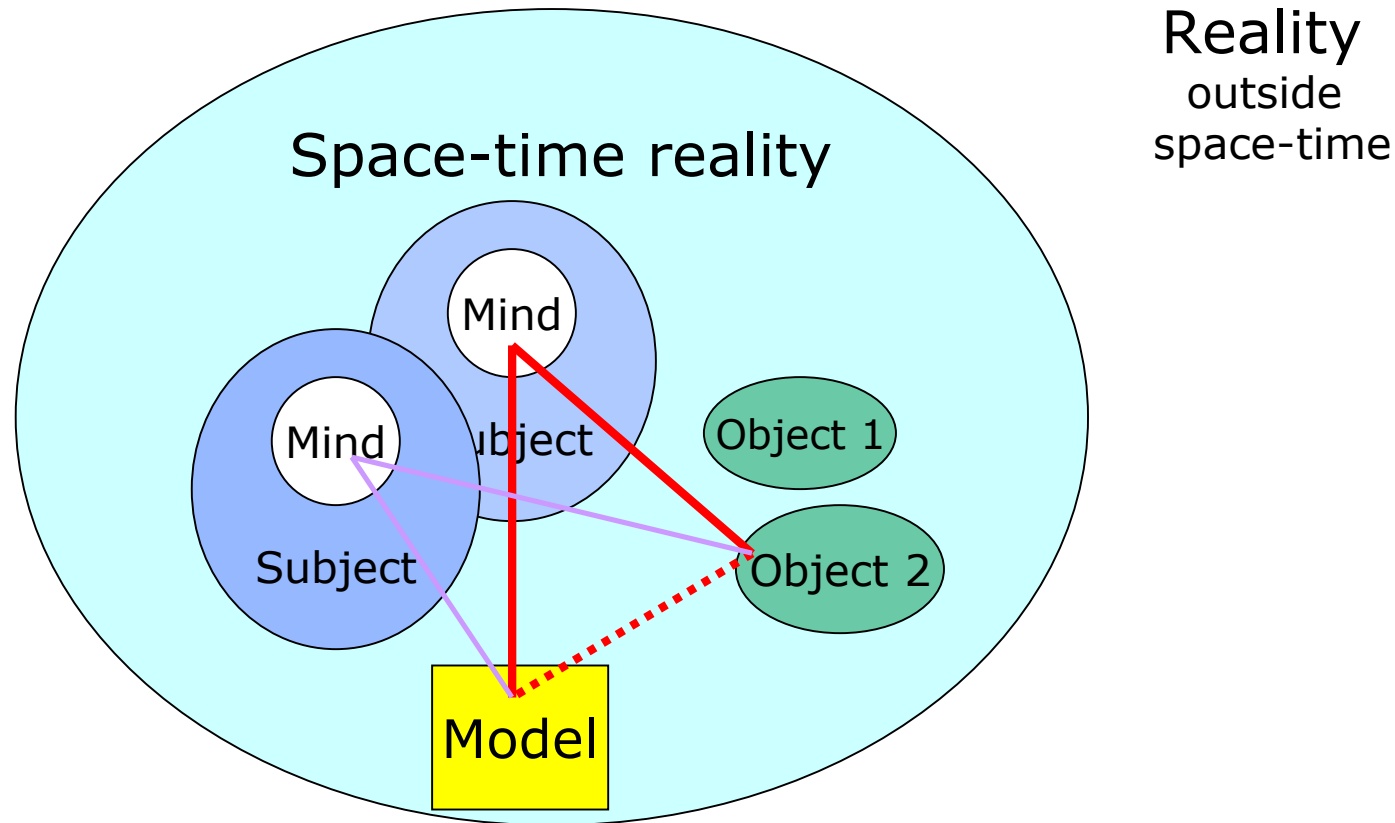
Naive Realism: Your model should be built exactly like the real world.  
Anything else is hokum.

# Models of the Real World: Extreme 2



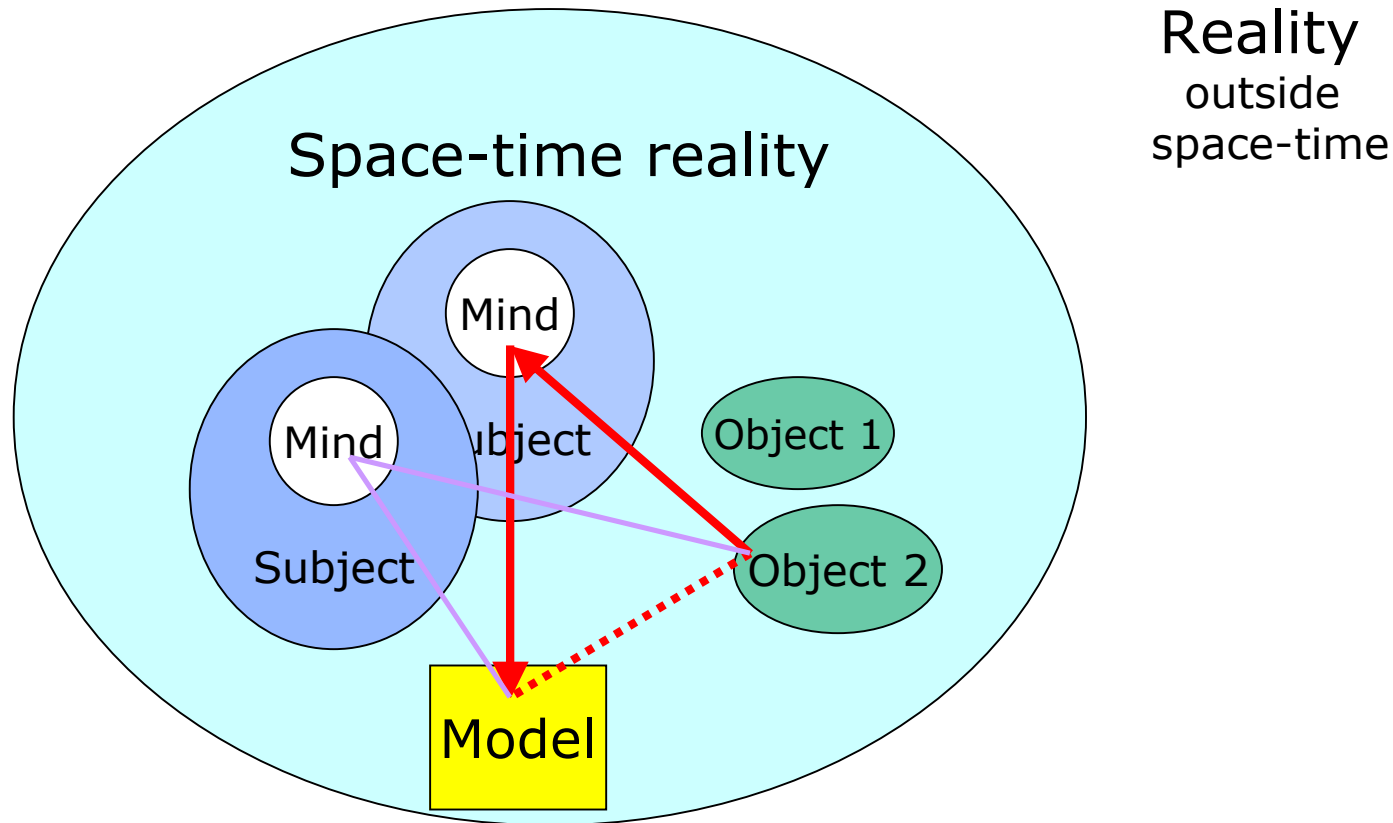
Radical Conceptualism: Models express concepts of human minds.  
That's it.

# Models of the Real World: Semiotic Triangle



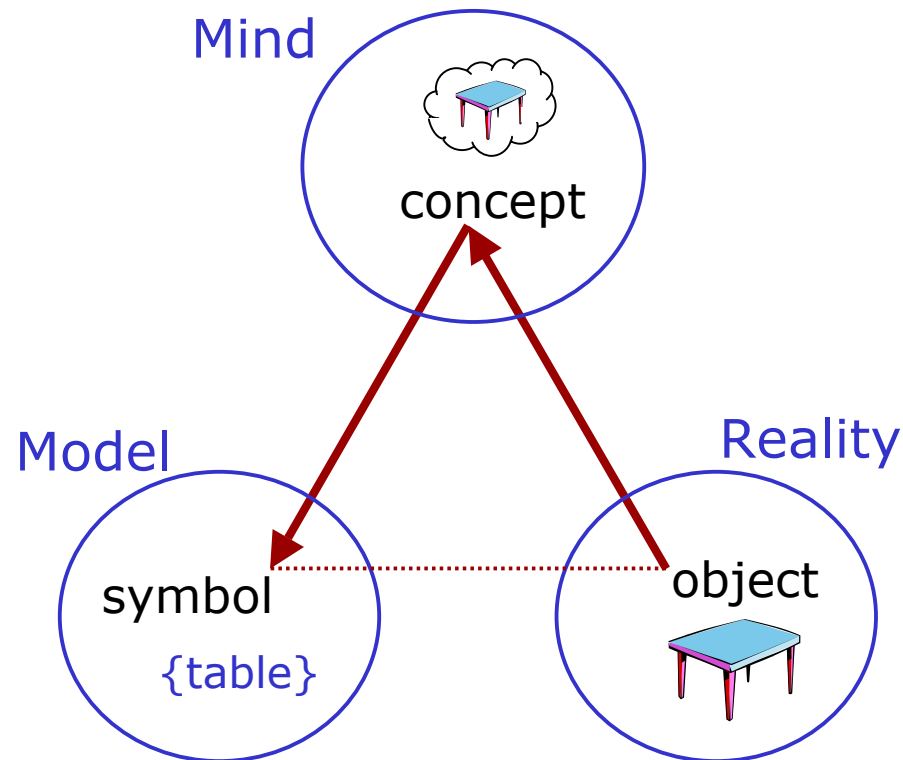
"Realistic" Conceptualism:  
The **Semiotic Triangle** links concepts in minds with symbols in models and with the represented objects.

# Models of the Real World: Semiotic Triangle



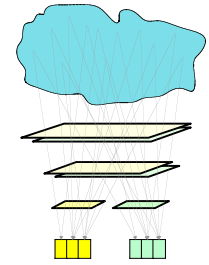
Interpretive approach:  
The mind **interpretes** reality.  
Models then follow the concepts of the mind.

# Models of the Real World: Semiotic Triangle

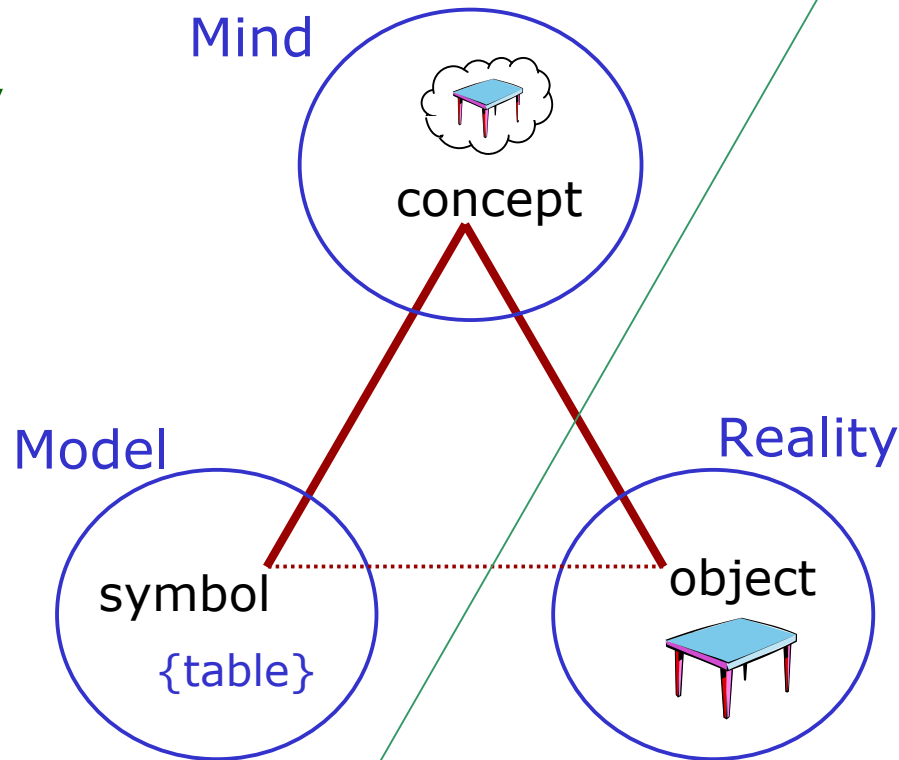


No direct relation between  
symbol and object  
→ Ogden / Richards (1923)

# Models of the Real World: Semiotic Triangle

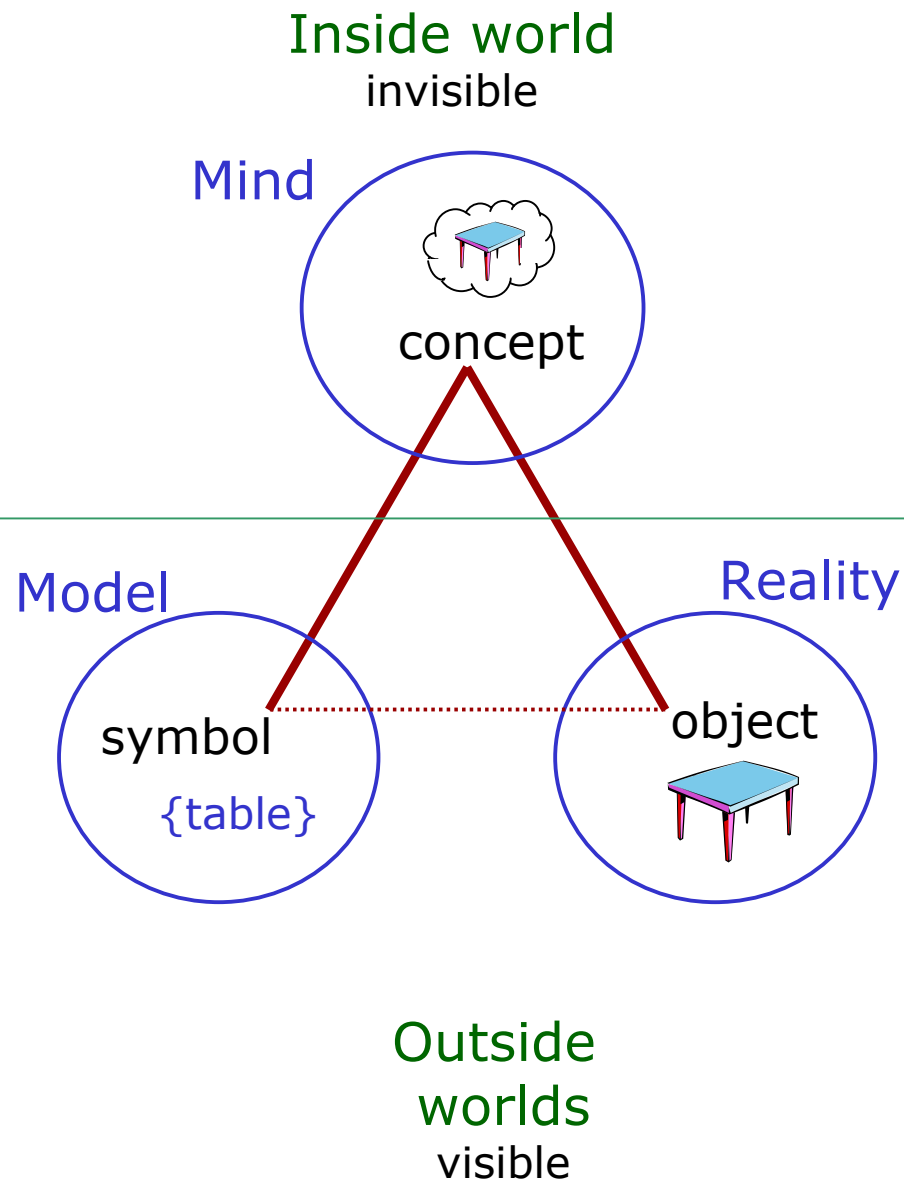


Secondary  
worlds  
reduced  
information

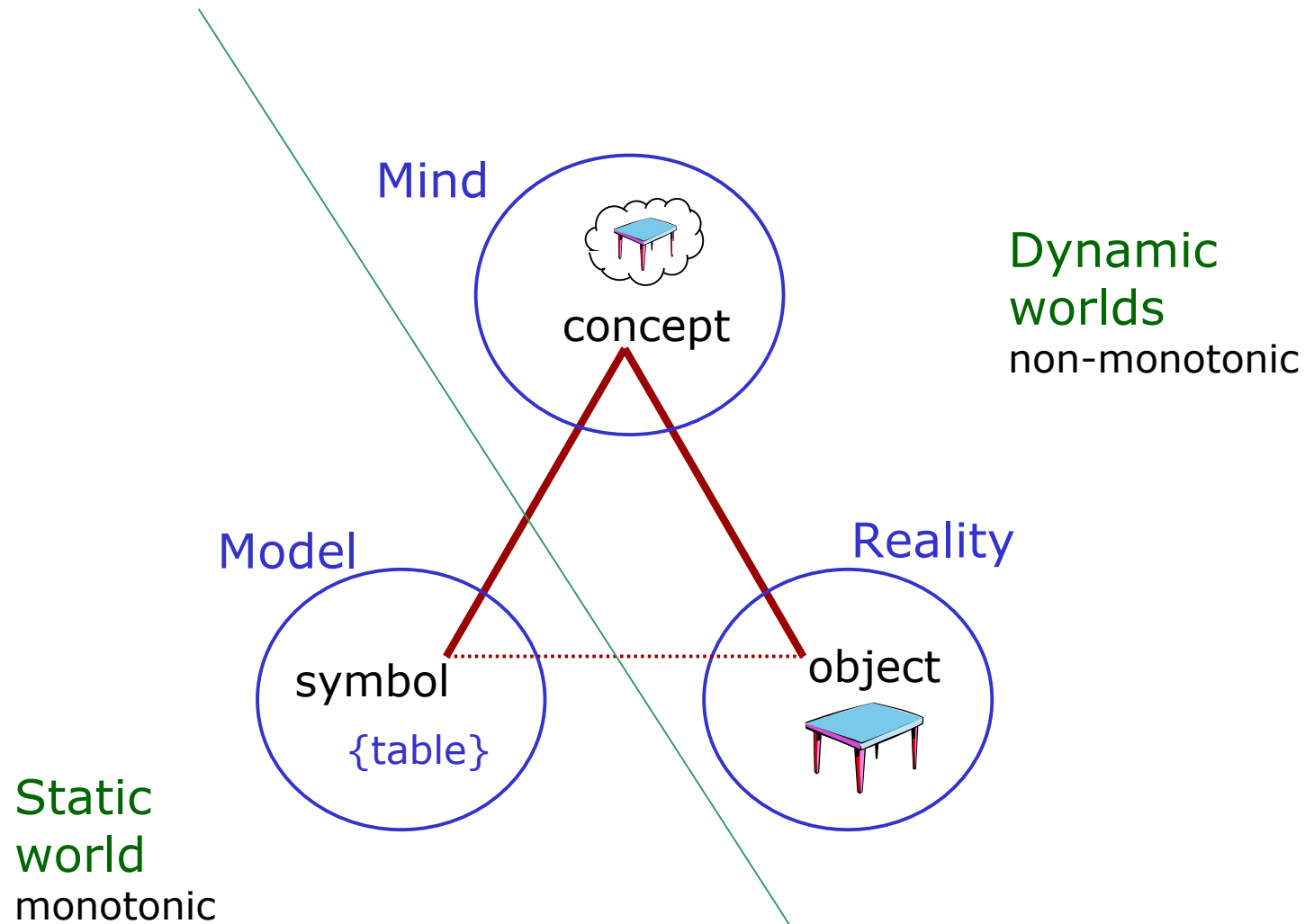


Primary  
world  
full information

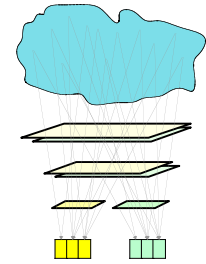
# Models of the Real World: Semiotic Triangle



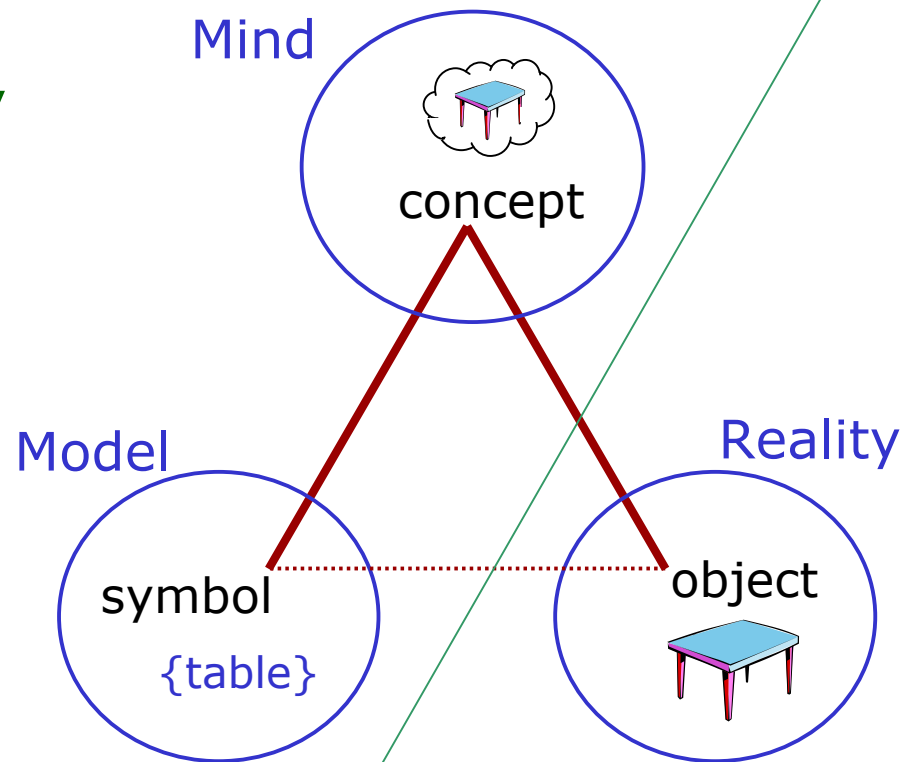
# Models of the Real World: Semiotic Triangle



# 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