Reality and Abstraction

A Look at Different Models

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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) $\rightarrow$ Two Extremes

- **Solipsism**: All is in my mind
- **Naive Realism**: Only material objects exist
Scenery for the Realism-Debate

Space-time reality

- Subject
  - Mind
- Object 1
- Object 2

Reality outside space-time
Extreme 1: Solipsism

The world exists only in my mind. Reality is an illusion.
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\( \mathbb{U} \)) in similar objects (individuals) is part of the objects and not outside of them. \( \rightarrow \textit{universalia in rebus} \)
Extreme 3: Nominalism

What is common in similar objects is just their name \( N \).

\[ \rightarrow \text{Universalia sunt nomina} \]
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

Reality outside space-time

Space-time reality

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)?

Space-time reality

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

Reality outside space-time

"Platonian"
"Aristotelian"
"Conceptualist"
Where are Universals for Living Systems (Species)?

Reality
outside
space-time

Space-time reality

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

Common history links all individuals!

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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

Space-time reality

Reality outside space-time

Where are numbers?  
→ Outside space-time  
→ Part of the objects  
→ In the mind of humans  

"Platonian"  
"Aristotelian"  
"Conceptualist"
Where are Universals for Non-material Concepts?

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

Reality outside space-time

"Platonian"
"Aristotelian"
"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

Reality
Patient
↓
Human perception
↓
Texts
↓
Codes
↓
Statistics, groups

most radical information reduction
Our Job: From the Patient to the ICD-10 Code

Reality
Patient

↓

Human perception

↓

Texts

↓

Codes

↓

Statistics, groups

↓

Information selection is directed by the intention (goal, subject)

Interpretation
Where are Universals?

Universals only based on the space-time objects (instances) seem to give an incomplete picture.
Models of the Real World (\rightarrow Ontologies)

- Space-time reality
- Subject
- Mind

- Reality outside space-time
  - Object 1
  - Object 2
  - Model
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.
"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

- **Mind**
- **Model**
- **Reality**

**Secondary worlds**
- Reduced information

**Primary world**
- Full information

- Concept
- Symbol: table
- Object: table

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Models of the Real World: Semiotic Triangle

Inside world
invisible

Mind
concept

Model
symbol
{table}

Reality
object

Outside worlds
visible
Models of the Real World: Semiotic Triangle

Mind

Concept

Model

Static world
monotonic

Symbol
{table}

Reality

Object

Dynamic worlds
non-monotonic
Models of the Real World: Semiotic Triangle

Conclusion: Minds and Models never cover the full information of reality
Thank you for your attention