

Reality and Abstraction: A Look at Different Models

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When we represent knowledge, how do the elements of our representation relate to elements of reality? Are, e.g., the relations between the representing elements equal to the relations between the represented elements? Different representations do answer such essential modelling questions differently, not without consequences to their precision, expressiveness and economy in maintenance.

To get a clearer view of facts and to ease the discussion, the author depicted a diagram of the scenery in which the reality-model discussion takes place. As the words for the debate – "reality" or "universal" e.g. – are often understood differently by the divergent positions, they can be given different places in the diagram and the divergencies in view become more evident and thus easier to be understood for the divergent positions. The diagram does (for a start) not show the personal view of the author about the reality-to-model relation, but is just an encompassing landscape where the diverse positions can be entered.

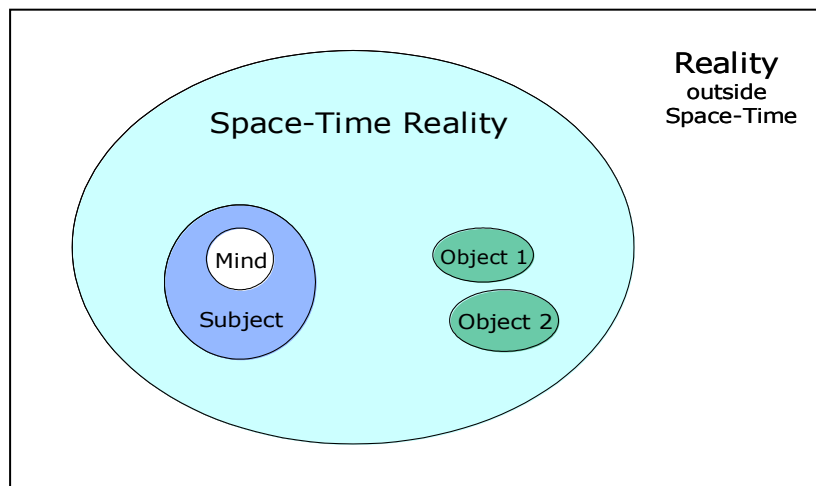


Figure 1: Scenery for the realism debate

The scenery can be illuminated according to the different positions. Figure 2 shows, for example, the (extreme) position of solipsism and the one of the "platonian" realism:

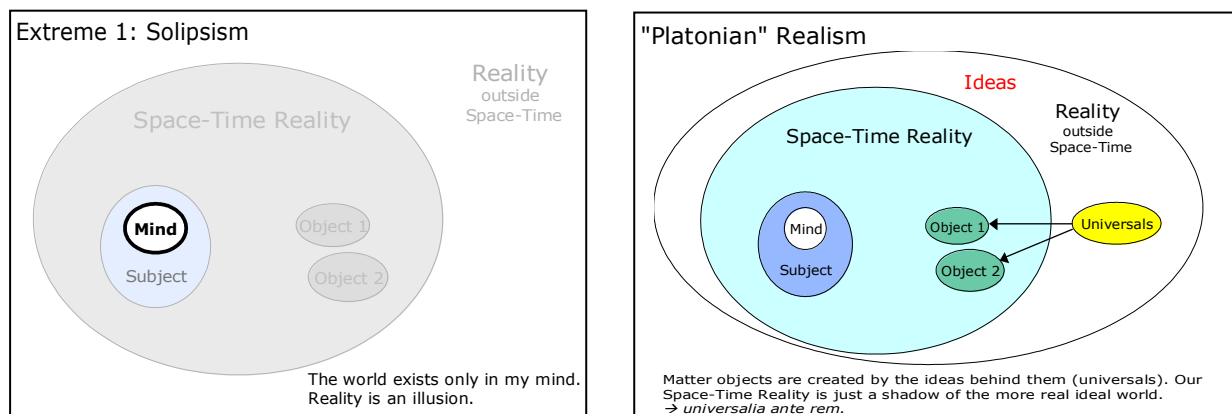


Figure 2: Examples of the view of the scenery by specific positions

Of course, more sensible positions than solipsism make more sense to discuss. Like in figure 2, the following classic views are shown and compared with the help of the scenery diagram:

- solipsism
- naïve realism
- "platonian" realism
- "aristotelian" realism
- nominalism
- conceptualism

That the discussion is not outdated or trivial, becomes obvious when we look at the ways different positions deal with universals.

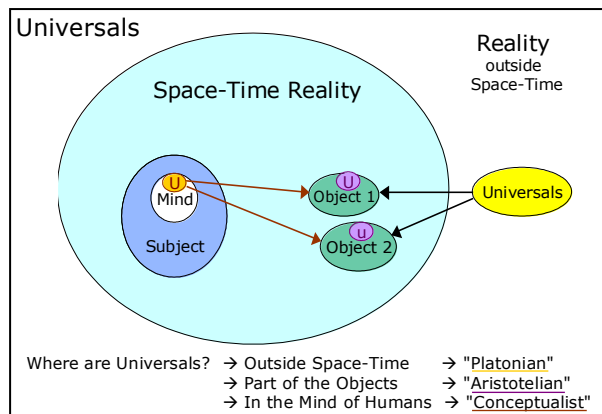


Figure 3: Universals as seen by 3 different positions

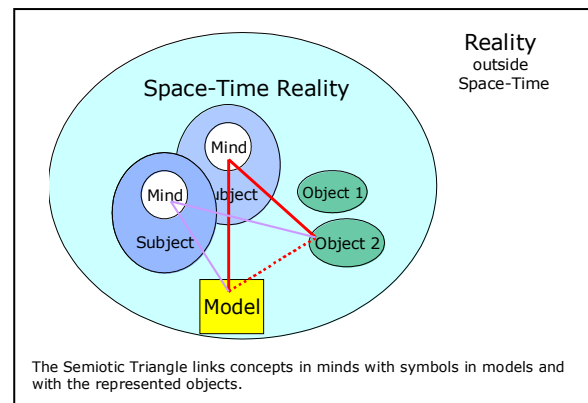


Figure 4: Talking about objects

Figure 3 compares, how "platonian" realism (right), "aristotelian" realism (middle) and conceptualism (left) understand universals. For the author it is obvious that these different views lead to differently built knowledge representations with consequences regarding the usefulness of their implementation and results.

The fact, that we *talk* about objects among different subjects can be added to the diagram (fig. 4) for further clarification.

Comparisons as in Figure 3 raise the questions, which consequences each position has, which one is superior (for a given purpose) and how we ourselves should handle universals for our own representations.

To clarify this point we look at different kinds of universals and ask how their position in the scenery is. Could it be that different kinds of universals could be placed and dealt with differently?

The following kinds of universals are placed in the diagram and compared:

- Numbers and objects of abstract logic
- Living systems, such as animal species
- Fictitious objects
- Non-material concepts (such as medical diagnoses)

The author presents his view with examples in the scenery diagram and claims that a distinction between the different universal groups makes sense. In doing so, elements of the "platonian", "aristotelian" and the conceptualist position are combined to form an integrative view of modelling (interpretation of reality).