

Ontologies and Concepts. Two Proposals.

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0 Introduction

This workshop is meant to contain some interaction between computer science and philosophy. I am a philosopher, and I have got some space to try to make visible some views of my philosophical-ontological realism. According to my experience, I am sorry to say, people who work mainly with data assembled in interviews – be they anthropologists, sociologists, cultural-studies-people, or knowledge engineers – tend to become non-realists with respect both to social reality and to mind-independent nature. Even more sadly, their bad philosophical ontology seems now and then to have bad repercussions on their pure scientific or practical work, too. In order to fuel discussions around these issues, I will now put forward a little realist pamphlet.

1 Only Fictions are Fictions.

Once upon a time there was a knowledge engineer called KE. He was given two tasks: 1. to construct a taxonomy of all the existing mammals on earth, and 2. to construct another taxonomy of all the humanoids in Star Wars. How did he proceed?

In the case of the earthly mammals, KE started to read relevant zoological literature as well as to interview taxonomically interested zoologists, i.e., the domain experts at hand. Since KE was a very good knowledge engineer, he very quickly understood the contemporary scientific mammal classification and turned it into a good computer system. In the other case, KE started immediately to see the Star War movies, read about them, and to check on internet what the domain experts now at hand, the real Star War fans, had to say. Immediately, he found on internet a list of the humanoids that occur in Star Wars. The Abyssin species was said to be “a swarthy-faced humanoid with a single slit-pupilled eye, a thirsty representative of the cyclopean species”; the Aqualish species was “a bellicose humanoid species with some superficial properties both aquatic and arachnid; they have hair-lined faces with large, glassy eyes and mouths dominated with inwardly-pointing tusks”; and so on. After some work, as expected, KE had classified the humanoids into classes and families and put his taxonomy on internet. So far, so good. And no essential difference between the two cases.

However, after a while KE found one indeterminacy in each taxonomy. In both cases, he went through all his material once again, but both the indeterminacies remained. What to do? His reputation as a good knowledge engineer seemed to be at stake. With respect to the fictional humanoids of Star Wars, KE's problem came to end when he happened to read Roman Ingarden's *The Cognition of the Literary Work of Art* (Evanston, Ill.: Northwestern University Press, 1973). He then realized that fictional entities necessarily have some "loci of indeterminacy". What is not described by the creators of a fictional entity is simply indeterminate. And that was exactly the case with the problematic humanoid. Nothing could and nothing should here be done by a good knowledge engineer.

With respect to the mammals, KE found quite another solution. He asked a zoologist to make some completely new observations related to the indeterminacy at hand. Since the mammals to be classified were really existing species, KE realized that there are in principle an infinite number of possible new observations that can be made. As things turned out, the new observations did in fact solve his indeterminacy problem. KE was quite happy that he had not tried to use the same methodology to solve both his problems.

When a knowledge engineer meets domain experts that are experts in relation to some areas or aspects of the real world, he has, whether he is aware of it or not, a choice. Either: he behaves as if what the experts tell him is all there is to say, that is, he treats them as authors of a story about fictional objects that very well may contain indeterminacies and even inconsistencies. Or: he takes a realist perspective and keeps an eye to the possibility of interaction with the world itself; if the domain experts contradict each other, then he asks them to reconsider their views.

Proposal: Fictions apart, the default position for every ontology creator should be the realist position; concepts are primarily links to the world. In this respect, there is no difference between application ontologies and reference ontologies.

2 Concepts are Tools.

When one is using glasses, microscopes, or telescopes, one sees *through* them in order to *look at* something in the world. But something similar is true also of the tactile sense in relation to ordinary tools. When one is real good at using a tool, it disappears from the foreground of consciousness, i.e., one is no longer intentionally directly directed at it. Instead, one is directed at that in the world which the tool affects. For instance, when I write with a pen, I am hardly aware of the pen, only of what I am writing. I do not feel my fingers holding and touching the pen; if I feel anything at all, it is rather the pen pressing against the paper I am

writing on. The same phenomenon can be observed even in relation to machines. When I am driving my car, normally, I do not feel my fingers pressing the steering wheels or my feet pressing the pedals or the floor. I am only directed at the road and the traffic.

Speech acts are tools for many things. They can be used to convey information, give orders, have discussions, make emotional outbursts, etc. In spite of the fact that speech acts do not have the same robust material character as ordinary tools have, they have several features in common with such tools. Think of conveying information in a language in which one is both making and understanding speech acts spontaneously. In the assertive speech acts at hand, one is directly directed at the world, not at concepts, statements, or propositions; nor, by the way, at grammar and dialects. But, of course, we can also be directed at concepts and conceptual strings. So we are when we are looking in a dictionary, in a phrase book, or are browsing on WordNet.

When one is not using glasses, pens, or cars, one can look at them and investigate them as objects of their own in the world. One can then try to find out their physical properties and internal structures. In the world of practice, normally, one observes “tools as objects” only when the tools in question are no longer functioning properly and, therefore, are in need of repairing. Something similar holds true of concepts. When our speech acts function well, we do not bother about the concepts, but when they don’t, as when we are learning a new language, we often direct ourselves directly at concepts in dictionaries.

All ontologies *make use* of concepts, but only some ontologies (e.g., WordNet) are also ontologies *for* concepts. When, by means of concepts, we are directed at something in the world, then the concepts in question may very well both (i) select aspects, (ii) select granularity levels, and (iii) create boundaries, without thereby (iv) creating aspects, granularity levels, and what is bounded. Think of the concept “mountain”. It selects a geographical aspect of the world, it focuses at a certain granularity level, and it is connected with a vague conventionally drawn boundary line that tells where mountains end. Nonetheless, it seems preposterous to say that the concept “mountain” creates the mountains. Ontologists who are reductive naturalists (and claim that only the fundamental entities of physics do really exist) or epistemological Kantians (and claim that we cannot lay claim to know anything about a mind-independent world) cannot be taken seriously until they have discussed the view of concepts just presented.

Proposal: Fictions apart, concepts should be looked upon as tools which can be used to direct us towards something that exists independently of these concepts. In this respect, there is no difference between application ontologies and reference ontologies.