

Ontology: from entities to operations.

Pierre Livet

Computer scientists have recently given a new life to the old concept of ontology, and philosophers have taken the opportunity to use their old know how about ontology as well as more recent metaphysical research (on mereo-topology, for example) in order to give sensible advices for building a common language between different data bases (see Barry Smith and Peter Simons work). New distinctions between entities have been proposed: occurents versus continuants, etc. and new problems appear: how to give a meaningful account of events, taking into account their dynamical aspect while keeping distinct their identity instead of merging them in undistinguishable flux. Networks can be built by relations between labeled entities represented by tags, and one have to take care of what kinds of relations and possible inferences relate different tags, as well as how different tags can be co-present on the same node. As different kinds of links build different kinds of distance and geometry in the network, different symbolic collective properties supervene on these different implicit geometries.

Our ontology has to express these different relations between different tags and labels, as well as the different possible operations offered by these different geometries. But operations have no real place in classical ontology. If we try to reduce them to relations, and to functions represented by their set of possible relations between the input values of the argument and the output values of the function, we miss the difference between function and operation (different operations can realized the same function). If we take as a core example a recursive function – the formal basis of computer science, in a sense- we might consider F in $F(x)$ as a property, x as a substance (or a property). The value of the argument can be also reduced to a property. But for defining a recursive function, we have to tell at least what are its values for the first steps of the recursion and from one step to its successor. What is then our ontology for “step”, “successor”, and “recursion”? Substances and property are not dynamical, nor are 4-Dimension entities, nor relations between 4-dimension entities. They can express the result of the recursive transformation, but not the operation itself.

Our proposal is that, instead of trying to use a specific difference combined to entities and properties to create a peculiar category of operation, we create a more generic category, entities and properties being subdivisions of it. As the word “process” is used to name 4-dimensional entities, we prefer not to use it and suggest to call this overarching category: “proceedings”. In proceedings, ways of being and being are not distinct, but proceedings proceed each in their own ways. From an outside point of view we can distinguish them (through favorable other proceedings that make

them distinguishable). The way of being can be either minimal, or developed. If the way of being is minimal (proceed= 0), we have entities, if it is static (proceed = 1), that is, reduced to an attachment, it is a quality or property, if it is dynamical and can make changes (proceed = $n > 1$), it is an operation (0, 1, n, are not new ontological entities but generated by the specific ontological status of the proceedings). The question arises then whether, if our tags in a network are degrees of proceedings, it gives to our networks new and more expressive properties.