

Agents are not only a technological resource, but also a metaphor used in the design of complex systems, a model for the study of the actual world and, most of all, a ground where many disciplines meet, as shown by their multifaceted applications. The paradigm of agents is based on concepts imported from many disciplines: the belief-desire-intention modeling from philosophy, interaction and dialogue, trust and delegation from social sciences, ecosystems from biology, and tools developed in many areas, like temporal, modal and epistemic logics, and game theory, just to quote some examples.

One of the most important challenges that the agents community is facing is that of building “open multi-agent systems spanning multiple application domains, and involving heterogeneous participants developed by diverse design teams”. If, as envisaged, this stage will be reached, then such agents will embed different conceptualizations of the common “environment” where they are interacting. At this point they will need a tool that plays the role of a bridge between the different conceptualizations. This is what foundational ontologies, such as DOLCE (*Descriptive Ontology for Linguistic and Cognitive Engineering*) are supposed to supply (see [www.loa-cnr.it](http://www.loa-cnr.it)). They are characterized by a very rich formal language and by the presence of many relations among categories and one of their main aims is that of characterizing the intended meaning of terms through different communities of use, in order to make agents (even heterogeneous ones) capable of communicate with each other and share information about the environment. Obviously, other agents are also part of the environment, and thus agents need to be able to represent them and communicate about them. From this follows that a foundational ontology ought to include a module dedicated to intentional agents and their mental features.

The main goal of this paper is that of sketching a preliminary characterization of the categories of the mental, able to fit (or possibly to amend) and integrate the foundational ontology DOLCE; we will call this module COM (*Computational Ontology of Mind*).

The idea of COM emerges from the need of a conceptual clarification from the standpoint of formal ontology of the entities that play a role in agent technologies for information systems, like mental attitudes, objects, processes, etc.

The paper focuses on the internal dimension, disregarding for the moment the external dimension of the interaction with other agents and the relation between internal states and what originates them.

The starting point of COM is the sketch of a representational approach, inspired by J. A. Fodor’s “Computational Representation Theory of Mind” (CRTM) from the philosophical side and by the BDI (Belief, Desire, Intention) approach from the computer science side. In the paper we won’t concentrate on questions like whether it is legitimate to compare some internal state of a machine with a human belief or intention; we will adopt what Daniel Dennett has called the “intentional stance”, i.e. we will use mental entities as means to describe and predict the behaviour of machines.