

On the Semantics of Reified Relationships

Nicola Guarino

Laboratory for Applied Ontology, Institute of Cognitive Sciences and Technologies,
Trento, Italy, nicola.guarino@cnr.it

Abstract. Relationships reification is a common technique in the description logics community and in the development of OWL ontologies. Reification allows us to express (meta) properties inhering to a relationship itself, and in general to overcome the limits of dealing only with binary relations. But what's the semantics of a reified relationship? For some, it is an assertion (of which we can express the provenance, for instance); for others, it is a fact (or a situation), which can occur at multiple times, so that some kind of temporal description logic may be adopted. And yet for others it is a particular temporal occurrence of a certain situation, i.e. a perdurant according to the DOLCE ontology, which becomes a member of the domain of discourse. In this talk I will defend the latter position, discussing the practical relevance of a methodological approach called Episode-centric conceptual modeling. Such approach shifts the focus of attention from relationships to their truth-makers, considered indeed in most cases as maximal perdurants (i.e., episodes, like a marriage, a loan, or a football game). I will discuss why and when it is important to represent such episodes explicitly, as well as why and when, in certain circumstances, it is necessary to go inside the microscopic structure of such episodes, analysing what would be responsible of internal changes within the episode itself. For instance, within their period of existence, a marriage can undergo a crisis, a loan can be restructured, a football game can become boring. This is ongoing work with Giancarlo Guizzardi.