Hybrid Logic and Description Logic

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It has been known for over a decade that there is a close link between modal logic and description logic, and this link has been exploited in a number of ways. Arguably, however, it is more accurate to say that there is a link between hybrid logic and description logic, and one aim of this talk is to explain why.

In their simplest form, hybrid logics are modal logics in which it is possible to refer to the individual entities in the interpreting models. Description logicians can think of basic hybrid logic as a formalism containing "one-of" operators, and with the expressive power to make (and mix) TBox and ABox assertions. So hybrid logic is a form of modal logic which directly addresses central concepts of description logic.

But just as important as the mathematical similarities are the 'cultural' differences. Description logic and hybrid logic were born in different traditions investigating different problems. Thus we are in the interesting situation of mathematically similar systems being investigated from an unusually wide range of perspectives. Accordingly, as well as explaining the similarity between the formalisms, I will try to bring out the flavour of the differences, and isolate what the traditions have to offer each other.

If you want to find out more about hybrid logic before this talk, take a look at the Hybrid Logic Homepage (`http://www.hylo.net`). You may also find it interesting to look at my paper *Representation, Reasoning and Relational Structures: A Hybrid Logic Manifesto*, which you can find at this site. However my talk will not assume any prior acquaintance with hybrid logic.