Epistemic Logics for Introspection

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Description: The aim of this tutorial will be to present new perspectives on the representation of self-knowledge in epistemic logic. The basic goal of the tutorial is to provide a self-contained introduction to epistemic logic, but the ambition is to present some recent developments in the field (use of double-indexing, epistemic updates), and to show how the framework can be extended in order to shed light on some recent philosophical debates about self-knowledge. For the most part the tutorial will be based on joint work with my colleagues Denis Bonnay (Bonnay and Egré 2009, Bonnay and Egré forthcoming) and Jérôme Dokic (Dokic and Egré 2009), in which these issues are investigated.

Background: In epistemic logic, an agent is called *positively introspective* if she knows that she knows that p whenever she knows that p, and *negatively introspective* if she knows that she does not know p whenever she does not know that p. Both principles are usually assumed in standard models of belief and knowledge (for instance in the partitional models of knowledge used in game theory). However both assumptions have been the object of intense debate in epistemology and the philosophy of mind. Timothy Williamson, in particular, has presented an influential argument against the principle of positive introspection in the context of a general discussion of epistemological internalism (Williamson 2000). Williamson's argument is challenging philosophically and from a logical point of view, in particular because it has a strong affinity with the sorites paradox and related epistemic paradoxes (including the Surprise Examination paradox, and some puzzles involving common knowledge).

Program: We will first review the basics of epistemic logic and will use Williamson's argument in order to compare different semantics for knowledge and belief, showing how they make different predictions for introspection (namely Williamson's margin for error semantics, Halpern's two-dimensional semantics, Centered Semantics, and Token Semantics). In the second lecture, I plan to introduce elements of Dynamic Epistemic Logic, which help to further clarify the puzzle put forward by Williamson.

Main References

Bonnay D. & Egré P. (forthcoming), Knowing one's Limits, An analysis in Centered Dynamic Epistemic Logic, in P. Girard, M. Marion, O. Roy (eds), *Proceedings of the 2007 Workshop on Dynamic Logic in Montréal*.

Bonnay D. & Egré P. (2009), Inexact Knowledge with Introspection, *Journal of Philosophical Logic* 38: 179-227.

Dokic J. & Egré P. (2009), Margin for Error and the Transparency of Knowledge, *Synthese* (2009), 166: 1-20.

Williamson T. (2000), *Knowledge and its Limits*, Oxford [chapter 5].