Posudek diplomové práce
Universita Karlova v Praze, Filosofická fakulta, Katedra logiky

Název DP: **Generic approach to updating uncertainty: Focus on conditioning**

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The thesis follows one of the branches in contemporary dynamic logic. The main and general framework is uncertainty that is subjected to changes caused by communication. I believe, it is 'small step in logical analysis of communication, but big step in analysis of uncertainty'. The main result of the thesis is the formulation of a general approach to the most important models of uncertainty and their updates by conditioning (public announcement).

In the first part of the thesis (chapters 1 and 2), there are introduced some formal representations of uncertainty (e.g., probability and possibility measures, ranking functions) and their generalization in plausibility measures approach. All these approaches have their own way to incorporate a change corresponding to public announcement (conditioning).

The second part (chapter 3) contains the mentioned result. *Conditional plausibility space* with some properties and its update given by *conditioning* (public announcement) can simulate conditioning on single-agent plausibility model, ranking structure, and possibility structure. Here, the simulation means that both structures satisfy the same formulas, both structures are *conditional equivalent*. Conditional equivalence is defined as *default equivalence* since the modal part (formulas $B^\psi\varphi$, i.e., conditional belief) corresponds to *default rules* without justifications (pivotal rules).

Remarks:

1. The author is a hardworking student with excellent English. The thesis is written by a clear way and comprehensive. The last part (chapter 4) contains some suggestions for the future research and I would like to encourage the author to go on. Simultaneously, I would be glad to see a paper based on the thesis.

2. From the viewpoint of philosophical logic, I would prefer more comments on possible applications and motivations of presented systems. So to see the position of a such study in dynamic logic.

3. Sometimes I feel to be a bit confused by the use of the term *proposition*; sometimes it is set of subsets (of possible worlds), sometimes it is

formula (pp. 37 and 39).

Questions:

1. Would it be reasonable to incorporate standard default rules in the framework of plausibility structures?

2. Does the application of public announcement in 'doxastic structures' correspond to the one in public announcement logic? (I mean the role of public announcement as a modality. In the thesis, public announcement is not in the introduced formal language, it is just an update mechanism.)

Statement:

- *Práce obsahuje všechny formální náležitosti, vyhovuje studijním předpisům a lze ji doporučit k obhajobě.*

- *Hodnocení:* výborně (A, excellent)

V Praze dne 22. 1. 2016   Michal Peliš (vedoucí práce)