Proof-Theoretic Approach to Logic of Utterance-Context Interaction

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Aim **Study interdependence of knowledge, belief, preference, permission, or obligation of agents on social relationship between agents, from the proof-theoretic viewpoint. In particular:**

1. **Investigate Labelled Sequent Calculus of Dynamic Epistemic Logic**
2. **Expand 1 to Two-dimensional Setting w/ or w/o Hybrid Logic**
3. **Formalize Possible Change of Social Relationship among Agents**

How

Key Semantic Idea

Traditional View:
$w \models B_a(a \text{ solved 7th open problem})$

Semantic View of Facebook Logic (2011):
$(w, a) \models B(\text{I solved 7th open problem})$

Epistemic Logic of Friendship: Seligman, Liu & Girard (2011)

If you are interested in Hilbert-style axiomatization of Epistemic Logic of Friendship, please come to my talk at LORI VI, scheduled on 13th September 2017!

Key Syntactic Idea: label

$$\mathfrak{M}^{\varphi_1,\ldots,\varphi_n}, w \models \psi$$

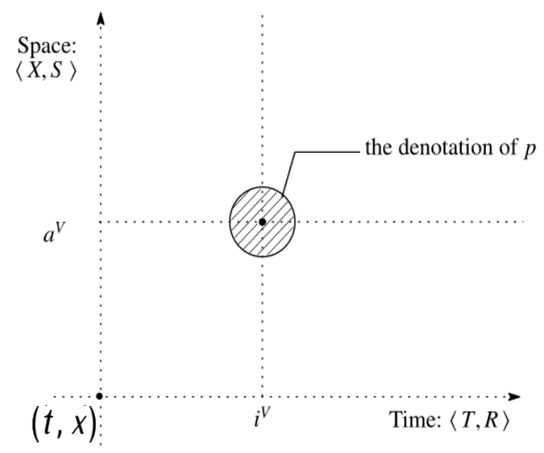
$$\rightsquigarrow \quad x :^{(\varphi_1,\ldots,\varphi_n)} \psi$$

$$\mathfrak{M}, (w, a) \models \varphi$$

$$\rightsquigarrow \quad (x, y) : \varphi \text{ or } @_x @_y \varphi$$

2D Hybrid Logic (Sano 2009)

$$@_i @_a p \wedge \langle \text{Future} \rangle i \wedge \langle \text{Up} \rangle a \rightarrow \langle \text{Future} \rangle \langle \text{Up} \rangle p$$



Selected References

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