

Epistemic Awareness Logics for Argumentation and its Dynamics

PhD Project

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Belief

Knowledge

Justification

Epistemology

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Argumentation

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Acceptability

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(C1) Epistemically influenced arg evaluation



Argumentation

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Argumentation

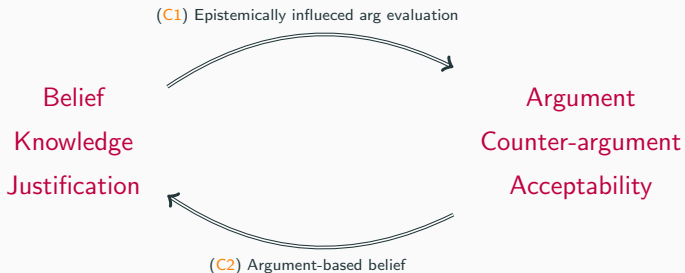
Argument
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(C2) Argument-based belief



Epistemology

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Dynamic Epistemic Logic

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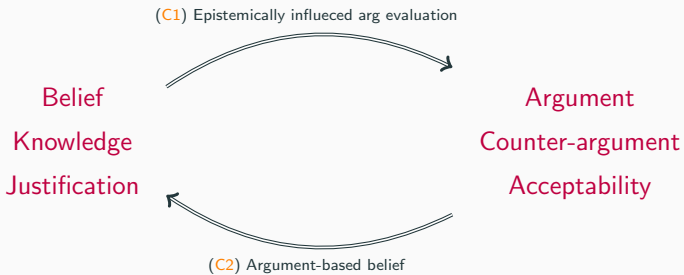
(C2) Argument-based belief

Dynamic Epistemic Logic

Formal Argumentation

Epistemology

Argumentation



Dynamic Epistemic Logic $\xleftrightarrow{\text{Awareness}}$ Formal Argumentation

Abstract persuasion and epistemic attitudes

Justified belief and argument strength

Conclusion and pending tasks

Abstract persuasion and epistemic attitudes

Three intuitions

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Different **policies of information update** (levels of trust) will influence the outcome of the debate.

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Assuming (**fix**) + (**obj**) we have

$$\text{MAF} = (A, R, \{A_i\}_{i \in Ag}, \{R_i\}_{i \in Ag}).$$

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 - Axiomatizing.

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Characterization of MAFs and their updates using the language of PAL:

$$p \mid \neg\varphi \mid (\varphi \wedge \varphi) \mid \Box_i\varphi \mid C_{\text{Ag}} \mid [\psi!]\varphi$$

Justified belief and argument strength

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- Accommodating ASPIC⁺-arguments (Modgil and Prakken, 2013) into awareness epistemic models (Fagin and Halpern, 1987).

Conclusion and pending tasks

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- Improving the COMMA's paper so as to make its agent fully rational and dynamizing the framework.

References

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