

NØthing is Logical

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People often reason contrary to the prescriptions of classical logic. In the talk I will discuss cases of everyday deviations from classical logical-mathematical reasoning and propose that they are a consequence of a tendency in human cognition to disregard models which verify sentences by virtue of an empty witness set (*neglect-zero tendency*, [1]). I will then introduce a bilateral state-based modal logic (BSML) which formally represents the neglect-zero tendency and can be used to study its impact on reasoning and interpretation. The neglect-zero tendency is modelled in BSML by means of the non-emptiness atom, NE, from team semantics [3]. In team semantics, formulas are interpreted with respect to sets of points of evaluation (*teams*) rather than single points. In BSML, a team is identified with a set of possible worlds in a Kripke model and represents the information state of the relevant reasoner. After discussing some of the applications, I will compare BSML with related systems (truthmaker semantics, possibility semantics, and inquisitive semantics) via translations into Modal Information Logic [2].

References

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