▸ ROBIN MARTINOT, *Meaningful proof systems and bilateralism.*
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In this talk we reflect on the notion of a 'meaningful' proof system, by which we mean a proof system that has a philosophically optimal relation to a semantics. We can distinguish several properties that affect this, such as syntactic purity (and its counterpart, semantic pollution) (see [2]); categoricity of proof systems (see [5]); and suitability of a proof system for proof-theoretic semantics (see e.g. [6]). We discuss some work in progress on these properties, focusing mostly on semantic pollution, in the setting of Abelian logic. Abelian logic is a non-trivial negation inconsistent logic of Abelian lattice-ordered groups, introduced by [1, 3]. Recent work by [4] provide proof-theoretic and model-theoretic descriptions of this logic, by among others making use of bilateralism in the semantics. Bilateral formal systems take a notion of denial as primitive next to the usual notion of assertion. This results in an enrichment of the language of a proof system, and so provides a suitable case study for semantic pollution, which has been unexplored in these systems so far. We provide work in progress on a bilateral sequent system for this logic, and comment on the philosophical implications of this system with respect to semantic pollution.

[1] Ettore Casari, *Comparative logics and Abelian l-groups*, ***Studies in Logic and the Foundations of Mathematics***, vol. 127 (1989), pp. 161–190.

[2] Robin Martinot, *A formal characterization of semantic pollution of modal proof systems*, *Submitted*.

[3] Robert K Meyer and John K Slaney, *Abelian logic (from A to Z)*, ***Paraconsistent Logic, Essay on the Inconsistent***, (1989), pp. 245–288.

[4] Satoru Niki and Heinrich Wansing, *Abelian logic on the Bochum Plan (and the American Plan as well)*, *Draft*.

[5] Ian Rumfitt, *The categoricity problem and truth-value gaps*, ***Analysis***, vol. 57 (1997), no. 4, pp. 223–235.

[6] Peter Schroeder-Heister, *Proof-Theoretic Semantics*, ***The Stanford Encyclopedia of Philosophy***, 2024.