

From Unified Correspondence to Parametric Correspondence (Invited Talk)

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Abstract

In this talk, we discuss a research program aimed at establishing systematic connections among the first-order correspondents of Sahlqvist/inductive formulas/inequalities across various relational semantic settings. We will focus on modal reduction principles, and the relational settings we will discuss include crisp and many-valued Kripke frames, and crisp and many-valued polarity-based frames (aka enriched formal contexts). Building on unified correspondence theory, we will discuss a theoretical environment which makes it possible to: (a) compare and inter-relate the various frame correspondents (in different relational settings) of any given Sahlqvist modal reduction principle; (b) recognize when first-order sentences in the frame-correspondence languages of different types of relational structures encode the same “modal content”; (c) meaningfully transfer and represent well known relational properties such as reflexivity, transitivity, symmetry, seriality, confluence, density, across different semantic contexts; (d) transfer notions and results such as the van Benthem theorem and the Goldblatt-Thomason theorem across different semantic contexts. These results can be understood as a first step in a research program aimed at making correspondence theory not just (methodologically) unified, but also (effectively) parametric.

