SOME RECENT DEVELOPMENTS IN THE ARGUMENTATIVE UNIFICATION OF DEFEASIBLE REASONING

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In his seminal 1995 paper on abstract argumentation Dung envisioned formal argumentation as a unifying framework for defeasible reasoning. The latter has been modeled in its many facets in terms of nonmonotonic logic. The unifying power of formal argumentation is substantiated if central nonmonotonic methods can be naturally phrased as forms of argumentative reasoning.

In this talk I will highlight some recent developments along these lines. First, I will demonstrate how sub-classes of logic-based argumentation characterize Makinson's method of default assumptions and the family of adaptive logics (joint work with Ofer Arieli and AnneMarie Borg). Second, I will illustrate how Makinson and Van der Torre's nonmonotonic input-output logics can be characterized by sequent-based argumentation and an underlying elegant proof calculus (joint work with Kees van Berkel). These two results generalize previous characterizations of reasoning with maximal consistent sets in the tradition of Rescher and Manor. Finally, I will show how several classes of prioritized default logic can be characterized in terms of ASPIC+, generalizing previous results by Liao et al (joint work with Pere Pardo).