



Título: On the Comparative Expressiveness of Semantics in Argumentation Systems.

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Resumo:

Throughout this thesis, we investigate whether some argumentation systems are (or not) equivalent concerning their expressive power. Our analysis is mostly focused on what we

consider to be the three main systems, listed in the chronological order in which they were introduced: Logic Programming (LP), Abstract Argumentation (AA) and Assumption-Based Argumentation (ABA). We will consider the core semantics available for each system, which roughly correspond to the particular cases of the partial stable (from LP) or complete (from AA and ABA) semantics. We compare these systems two at a time, considering back-and-forth translation function between the theories (for syntax) and semantic models from one system to another. By doing so, we found multiple correspondence results based on different translations between these systems, usually with one notable exception: the semantics characterized by minimal sets of uncertain sentences. Given the notable differences, we try to track down why these semantics differ based on the available translations. From this effort, we learned that the differences could be tracked to corresponding theories where the sets of sentences evaluated in each system have different cardinality, preventing the proposal of bijective translation functions. Finally, we show how to overcome this limitation in the translations between LP and AA by means of an operator we dub semantic projection.

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