Bipolar Logic with Lithium*

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Abstract

In prior work, we explored Bipolar logic, which contains two modalities, a *manic* modality under which any number of intuitionistically unsound propositions can be proven and a *depressed* modality under which only the most trivial propositions could be proven. Despite the promising applications of bipolar logic in the areas of generating Dutch Post-Impressionist graphs, M.A.C.H.O. expatriate ciphers, and Grunge compositions proof search in bipolar logic is made exceedingly difficult by the unpredictable and dramatic shifts between the *manic* phase and the *depressed* phase. Even the most successful applications of bipolar logic are difficult to assess, because these most successful programs are so unstable they tend to suddenly self-destruct with little hope of recovering the old code.

We propose a Linear Bipolar Logic with Lithium. The presence of lithium resources controls for the sudden shifts between *manic* and *depressed* phases, making proof search more tractable. However, we leave as an open question whether Linear Bipolar Logic with Lithium is as expressive as the traditional presentation of Bipolar Logic.

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