A number of fundamental concerns have motivated linguistic theory within the generative tradition. In this talk, I consider three such concerns: explanation, typology, and computation. Significantly, these three goals are not equally well captured in the various phonological formalisms developed in the last half century. In this paper, I develop a computational analysis of ATR harmony in Iny (Ribeiro 2002, 2012) using boolean monadic recursive schemes (BMRS; Bhaskar et al. 2020) to account for the behavior of *icy targets* – elements that undergo but do not further propagate the harmonic feature. I argue that direct reference to input and output features values in BMRS enables a superior explanation for the data than is possible in other formalisms, notably Optimality Theory and its serial, rule-based predecessors.

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