THE DEPARTMENT OF LINGUISTICS ANNOUNCES

‘Computing Cyclic Phonology in Armenian: Logical Structure of the Morphology-Phonology Interface’

A dissertation defense by

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Abstract: A fundamental goal in generative phonology is discovering what principles control the systematic alternation in the pronunciation of morphemes. There is a wide history of research on this topic (Scheer 2011). Two commonly cited factors are morphological structure (Kiparsky 1982, 2015; Dixon and Aikhenvald 2003; Bermúdez-Otero 2011) and prosodic structure (Nespor and Vogel 1986; Selkirk 1986, 2011). Together, these factors define rule domains for phonological processes. These structures can be created either cyclically (i.e., recursively) or non-cyclically. In this dissertation, I analyze the landscape of the morphology-phonology interface in Armenian. Doing so requires accurate empirical descriptions and theoretical generalizations which can be computationally formalized. On the empirical side, I document various types of phonological processes and phenomena in Armenian. These processes are morphophonological because they heavily reference morphological structure, cyclic derivational history, and prosodic structure. Two main examples of these phenomena are destressed high vowel reduction and compounding. Most of the data has so far been inaccessible to English-speaking audiences because it was limited to philological work conducted in Armenian. The empirical contribution simultaneously acts as a theoretical contribution. Armenian morphophonology presents case studies of cyclicity, lexical strata, sublexical prosodic constituents, and bracketing paradoxes. The data challenge, falsify, and reinforce different hypotheses about the interface. This empirical and theoretical background serves as the base for developing a computational formalization of the interface in terms of formal logic. I develop a computational formalism using Monadic Second Order logic over graph-to-graph functions. The logical formalization provides a theory-neutral diagnostic for the generative capacity of the interface and other formal properties.