

THURSDAY INTERDISCIPLINARY COLLOQUIUM

Thursday 15/06/2023

16:15-17:45

Eyal Marco, Tel Aviv University

Joint work with Radan Nasrallah and Ezer Rasin

Webb 103

Phonological derivations are not harmonically improving: Evidence from Nazarene Arabic

Opacity is a well-known phenomenon where phonological processes do not receive support on the surface (Kiparsky 1971). It poses various challenges for phonological theories, notably to the classical version of Optimality Theory (OT; Prince Smolensky 1993/2004), which applies phonological processes in a fully parallel fashion. In response to the opacity challenge, a variety of extensions to the classical model have been proposed. Our focus is on extensions that incorporate a limited kind of serialism into OT: Harmonic Serialism (McCarthy 2000, 2016) and Optimality Theory with Candidate Chains (OT-CC; McCarthy 2007). These theories maintain basic OT properties, but differently from classical OT, they apply phonological processes in a series of steps. The degree of serialism permitted by these theories is restricted by a property that McCarthy has called *Harmonic Improvement*, according to which every derivational step induces a change that creates an output that is ‘more harmonic’ than the input of that step, i.e., every derivational step must generate a better form with respect to the constraint ranking of the language. One consequence of Harmonic Improvement is that it rules out derivations of the form $/A/ \rightarrow |B| \rightarrow [A]$ (also known as Duke-of-York, see Pullum 1976, McCarthy 2003, Gleim 2019), because $/A/ \rightarrow |B|$ implies that B is more harmonic than A while $|B| \rightarrow [A]$ contradictorily implies the opposite.

We present new data regarding the distribution of stress and vowel length in Nazarene Arabic (NZA), an understudied variety of Palestinian Arabic spoken in Nazareth, Israel. We argue that this distribution is opaque and is best analyzed through a derivation of the form $/A/ \rightarrow |B| \rightarrow [A]$, where the application of a vowel lengthening process is undone by a later vowel shortening process. We conclude that generating such a pattern requires two properties:

- (1) Architectural properties required to generate NZA
 - a. Intermediate representations.
 - b. Freedom to undo phonological processes.

The distribution thus poses a challenge to parallel theories that do not posit intermediate representations as well as serial theories of phonology that obey Harmonic Improvement. We show this by arguing that Harmonic Serialism and OT-CC have trouble generating the NZA pattern, but not rule-based phonology (Chomsky & Halle 1968) and Stratal OT (Bermúdez-Otero 1999, Kiparsky 2000), which have the freedom to undo processes in the course of the derivation. The structure of the argument is summarized in (2). Our conclusion is that phonological derivations are not harmonically improving.

(2)

	Property (1a)	Property (1b)	Successful on NZA
Parallel OT	✗	✗	✗
Harmonic Serialism and OT-CC	✓	✗	✗
Rule-based phonology and Stratal OT	✓	✓	✓

Click [here](#) to see the colloquium program.