

A typological study of front/back harmony systems

Personal Background: I am currently pursuing an MA in Linguistics at the University of Toronto. This program involves coursework and a thesis. My thesis, entitled “Directionality in vowel harmony: phonetic evidence from Hungarian”, examines new evidence for a typological problem in harmony.

Research Question: In my PhD, I intend to study the typology of front/back phonological vowel harmony systems. I will investigate what types of front/back harmony systems are attested, what conclusions we can draw about directionality and locality from these systems, and what theoretical framework best represents the cases. These technical terms will be defined below.

Context: Phonological HARMONY, a phenomenon in which vowels or consonants in a word are required to agree for certain properties, is well-studied (Vago 1973). For example, most Hungarian suffixes have both front and back versions (Törkenczy 1997). Thus, *tök-nek* ‘pumpkin’ and *város-nak* ‘city’ both have a dative suffix; the suffix vowel is the target of harmony, so that front vowels like *ö* in the stem trigger the front vowel *e* in the suffix, and back vowels like *o* trigger the back vowel *a* (Törkenczy 1997).

However, while vowel harmony has been extensively studied, the TYPOLOGY of possible vowel harmony systems is still relatively poorly understood. For the less common consonant harmony, Hansson (2010) outlines the attested types, unifying common characteristics of the phenomenon as well as examining specific languages. Kaun (2004) did a similar study for vowel rounding harmony. Such studies allow researchers to understand exactly what phenomena and issues exist and require theoretical explanation.

The proposed study builds on Hansson (2010) and Kaun (2004), with a typological examination of FRONT/BACK HARMONY systems. This type of harmony, found primarily in Uralic and Altaic languages, but also in Kaska (Hansson and Moore 2011), Kalong (Hyman 2003), and Gunu (Hyman 2001), requires vowels in a word to all be pronounced with the tongue at either the front or back of the mouth; combinations of front and back are not allowed (Vago 1973). The Hungarian example above illustrates.

There are numerous differences between front/back harmony systems. For example, Turkish front/back harmony co-occurs with rounding harmony and all vowels participate, while Finnish has front/back harmony but no rounding harmony, and the front unrounded vowels *i*, *e* are unaffected (Clements and Sezer 1982, Vago 1973). Due to such differences, language-specific analyses of front/back harmony often differ substantially. Moreover, there are no systematic studies of what is attested and impossible in front/back harmony. To facilitate analysis, a thorough typological study is necessary.

Front/back harmony is particularly interesting because it demonstrates the most intriguing and complex issues in the study of harmony more generally: locality and directionality. With respect to LOCALITY, harmony is often thought of as the “spreading” of a certain sound feature through the word, originating from articulatory effects between adjacent vowels and facilitating ease of articulation and/or perception (Kaun 2004). Thus, it is expected to be local (Booij 1984). Non-local harmony, in which intervening vowels are skipped over, does not accomplish these phonetic goals and thus is predicted to be impossible. However, in some front/back harmony systems, locality is violated (Kiparsky and Pajusalu 2003). For example, the Hungarian vowels *i*, *í*, *é* are usually skipped by harmony, giving forms like *radír-nak* with a back-front-back sequence (Van der Hulst 1985). Such forms are particularly surprising from a theoretical view because they contain two disharmonic transitions, back-front *a...i* and front-back *i...a* (Kiparsky and Pajusalu 2003). To build a successful theoretical account and to determine why non-locality is possible, a better understanding of attested types of locality violations is necessary.

DIRECTIONALITY refers to the fact that harmony goes from earlier to later vowels in some languages and vice versa in others (Hyman 2002). Front/back harmony systems are ideal for investigating directionality

because many languages appear to have strictly progressive harmony, contradicting the ‘right-to-left bias’ of many phonological phenomena (Hyman 2002, Krämer 2003). My MA thesis investigates this problem in Hungarian. A thorough examination of these languages would help determine whether and why they violate this general direction bias that occurs across languages and phenomena.

Objectives: The major aim of this study is to investigate the typology of front/back harmony systems in order to develop an understanding of the attested and possible languages, focusing on directionality and locality. In addition, the study aims to evaluate theoretical analyses of harmony in relation to the front/back typology, allowing for the development of an analysis that best accounts for the possibilities. A secondary objective is to create a searchable, online TYPOLOGICAL DATABASE of cases of these harmony systems for further research. While such databases exist for other phenomena, there is no database for front/back harmony systems, and such a tool is of benefit to the linguistic community.

Methodology: The study aims to follow Hansson (2010) and Kaun (2004), by examining and analyzing the typology of front/back harmony systems. The work consists of two parts: developing a database of front/back harmony and creating a unified analysis. For the former, a typological overview of languages with front/back harmony systems will be undertaken, drawing on a range of data sources, including grammars and previous analyses. Special attention will be given to important properties of harmony like locality and directionality, as well as to factors that might influence these characteristics, such as the sound inventory and the use of suffixes and prefixes. Such information has not previously been compiled for this purpose. This database will be put online and made searchable by language, language family, locality properties, direction of harmony, and other such characteristics.

The database will be used to illuminate and justify important cross-linguistic generalizations about front/back harmony systems, such as what types of systems are attested and where crucial gaps exist, focusing on the major issues of locality and directionality. Languages with particularly interesting characteristics will then be examined in more detail. This work builds on my MA thesis, in which I am incorporating a phonetic study on “skipped” vowels in Hungarian to analyze directionality.

The study will also develop a unified PHONOLOGICAL ANALYSIS for the attested front/back harmony systems, in a way that accounts for the typological generalizations. This analysis will examine existing theories of harmony, including spreading (Gafos 1999, Jurgec 2011) and agreement (Rose and Walker 2004), in order to determine which type of theory best fits the attested patterns of front/back harmony. The typology of front/back harmony systems will allow for a critical evaluation of existing theories based on their ability to explain properties and issues that are currently not thoroughly understood.

Contributions: The study will have major contributions to theoretical linguistics, and phonology in particular. Existing typological works on vowel rounding harmony (Kaun 2004) and consonant harmony (Hansson 2010) are highly cited and useful resources, because they allow other researchers to access all the relevant data and generalizations in one place. The proposed study will do the same for front/back harmony systems, both by collecting language data and by revealing generalizations about directionality and locality. The analysis section will contribute to the development of phonological theory by accounting for a variety of languages and phenomena within front/back harmony, and by examining the major phonological issues of locality and directionality in a novel way.

Program: Since two of the top researchers in phonological harmony, Dr. Gunnar Hansson and Dr. Douglas Pulleyblank, are at the University of British Columbia (UBC), I intend to pursue my PhD in Linguistics at UBC. There, I will have access to the resources and support to make substantial contributions to the study of harmony.