

ALIENS VS. ALLIES: The Heterogeneity of Disharmony in Turkish

Turkish Vowel Harmony (TVH): TVH is traditionally described as a progressive assimilation or an agreement relationship among successive vowels: A non-initial vowel agrees with a preceding vowel in terms of backness and, if it is [+high], also in rounding. Leaving the inherent problems with the Feature Theory aside (cf. Harris & Lindsey, 2000; Backley, 2011), proponents of this view of harmony must assume that disharmony (DH) is *homogenous*, in the sense that *any* absence of agreement is directly expected to be unacceptable.

The Problem: The major problem with TVH is that it regularly applies in suffixes (except for a few non-alternating ones, which will be disregarded here), yet there are (*assumed to be*) a lot of disharmonic stems, most of which are borrowed roots. These facts are troubling for a theory like Government Phonology (GP), which embraces the Minimality Hypothesis (MH) as a fundamental principle, which phonological operations have to adhere to:

Minimality Hypothesis: Processes apply whenever their conditions are met. (Kaye, 1992)
Given the MH, it is impossible in a GP-framework for a phonological process to apply only across boundaries, but not within a single analytic domain, i.e. to say that only suffixes are subject to harmony. Moreover, it is also incompatible with GP to argue that harmony affects native Turkish words only, i.e. for instance to claim that loanwords belong to a different co-phonology. A more plausible view is that certain vowel sequences occur more often in the primary linguistic data while others are rare or almost non-existent. Hence, it is to be expected that certain vowel sequences sound more *alien* than others even to adult speakers and are also more difficult to pronounce for them. This study aims to figure out which sequences are favored and which ones are disturbing for native speakers of Turkish, which might shed light on the issue of the so-called exceptions to TVH by pointing to the need for a revision of the principles underlying this process.

The Experimental Setup:

Participants: So far 24 Turkish native speakers participated in the two tasks described below (6 males and 18 females, age range: 18-59, average age: 23:6 (mean)).

Task A: For the first task, the subjects were given a written list of 110 bi-syllabic words in random order. The sample contained 34 Turkish words (loans) and 76 nonce-words, all of which are disharmonic in the traditional sense (i.e. successive vowels exhibit *some* kind of disagreement in backness or in rounding). In order to minimize the effect of neighboring consonants on the vowels, the nonce-words contained voiceless obstruents only. The presented Turkish words contained 34 out of the total 48 disharmonic vowel sequences, the remaining 14 being left out due to the lack of frequently used lexical items containing such sequences. For the nonce-words, all possible disharmonic vowel sequences were used at least once. The participants were asked to pronounce each word once, and then write down a score in a scale of 1 to 5 with respect to “how Turkish” each one sounds.

The preliminary results of this task indicate that ‘a’ and ‘e’ are rather free to combine with other vowels in any order. On the other hand, when ‘ı’ (u) and ‘ö’ (ø) occur in a disharmonic sequence, they are mostly judged to be disturbing.

Task B: For the second task, the subjects were given a one-page-long story containing both Turkish words and a total number of 56 nonce words. All the nonce words used (i) were disharmonic in the traditional sense, (ii) were tri-syllabic, (iii) contained only voiceless obstruents, (iv) occurred in positions which are expected to be interpreted as nouns, (v) did not occur in the immediately pre-verbal position, which is assumed to be the default focus position in Turkish and is prosodically more prominent. The participants were instructed to

read the story twice. The second reading was recorded to see whether they can process the written form and pronounce it correctly, and, if they do, where they put stress. Also, if they could not pronounce the word in the expected way, or had trouble in pronouncing it, the error types and notable difficulties were recorded.

During the analysis of the recordings, significant differences were noticed among the pronunciability of different nonce-words, or of different vowel-sequences in general. It was found out that almost all of the most easily pronounceable words contained the vowel 'a' in their disharmonic sequences. On the other hand, sequences containing the vowels 'ı' and 'ö' were troubling to pronounce. Another observation was that almost all of the participants pronounced almost all of the words with a non-final stress (final stress is considered to be the default in Turkish). Moreover, other than words that were pronounced with a different vowel than the orthographically expected one, there were also cases where participants simply induced short pauses among syllables that were difficult to pronounce as a single word. These pauses sometimes were accompanied by the lengthening of the preceding vowel. One of the participants used lengthening without pausing. Hence, it seems that different participants used different repair strategies for pronouncing the *aliens*.

Discussion: I argue that the principles underlying TVH need a fine-grained revision. Referring only to 'backness' and 'rounding' features, or arguing TVH to be simply I-/U-spreading, is not sufficient to explain the asymmetries in acceptability of possible vowel sequences in Turkish. I argue that the experimental data can be considered to support the following ideas, which can be helpful in revising TVH-principles such that the process will adhere to MH:

- The finding that vowel sequences with 'a' and 'e' are mostly acceptable (Task A) and easily pronounced (Task B) supports the idea that the element A is/behaves fundamentally different from I and U (Kaye & Pöchtrager, 2009; Pöchtrager, 2010).
- The observation that 'ı' (which is assumed to be the 'empty' vowel in Turkish, lacking any elements) and 'ö' (the most complex vowel containing A, I and U) create the most *alien* sequences in Turkish, that are both difficult to process and to pronounce, points to the idea that there may be some sort of a Complexity Condition (Harris, 1990) at work.
- Vowel lengthening and stress were used as repair strategies in pronouncing the *alien* sequences. Hence, long vowels and stressed positions seem to interact with harmony. Further research is necessary to figure out what the exact nature of this interaction is.

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