

Phonological Opacity in Southern Kurdish: A Case Study of Counter-bleeding Interaction of Processes

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Introduction: The study aims to analyze a case of phonological opacity in Southern Kurdish (SK) verbal construction. Phonological Opacity was first introduced by Kiparsky (1973) to measure to what extent the context or the output of phonological processes might be determined only by examining the surface structure. He then put forward three cases in which a phonological rule $P, A \rightarrow B/C_D$ is considered as opaque, with the second case being as "instance of B created by P in an environment other than C_D" (Kiparsky, 1973).

Statement of the Problem: In SK, which covers a range of different dialects and accents such as Kalhori, Kermanshahi, Ilami, etc., vowel hiatus is generally avoided and if two vowels meet as a result of morphological concatenation, different strategies are adopted to resolve the hiatus, depending on the context. One of the strategies is elision of the vowel belonging to an affix.¹

(1) / na + a + en/ ----> [nan]
Neg come 3P "(if) they don't come"

As it is evident in (1), the vowels of the affixes are elided to avoid hiatus, leading to a surface form with only one vowel rather than three.

Another strategy for resolving hiatus is to turn a high vowel into its glide counterpart.

(2) / na + a + in/ ----> [najn] (3) / da + y + em /---->[daɣm]
Neg come 2P "(if) you don't come" Give-past perfect 1S "They had given."

Here in examples (2) and (3), the sequences "ai" and "ay" are avoided, this time through glide formation rather than elision.

It should be noted that if there is no good reason for deleting a vowel (e.g. vowel hiatus), affixes will maintain their vowels. This is true when a glide and vowel meet.

(4) / daw + en / ----> [da.wen]
run 3P (They run.)

Example (4) shows that the sequence of a glide and a vowel is acceptable in SK. Despite all things said above, there are still surface forms like [najn] (*They didn't see*), in which [na] is a negative marker, [j] past verbal stem of the verb *see*, and [n] the verbal ending of third person plural. Another example is [nawn] (*if they are not*), with [na] being a prefix for negation, [w] being the subjunctive mood of the verb *be*, and [n] the third person singular suffix. Also, the form [naɣn] (*They were not*) is made up of [na] (negative marker), [ɣ] (past form of the verb *be*), and [n] (third person plural).

(5) [najn] (6) [nawn] (7) [naɣn]

The question is why the vowel of the suffix is elided in spite of the fact that it is adjacent to a glide (and not a vowel).

¹ Symbols used in this abstract are those of IPA (revised to 2005).

Discussion: In the phonetic forms (5), (6) and (7), vowel elision applies but there is no vowel hiatus to trigger it. Vowel elision has applied where the context is not expected (second case of opacity introduced by Kiparsky 1973).

In order to give an account of such opacity, we need to track the changes made from underlying representations to the surface forms. The underlying representations of forms (5), (6), and (7) are represented in (8), (9), and (10).

(8) / na + di + en / (9) / na + bu + en / (10) / na + by + en /
 Neg see-past 3P Neg be- subjunctive 3P Neg be-past 3P

In SK, non-dorsal voiced plosives are not stable in intervocalic position and undergo different changes depending on the following vowel. One of these changes is elision when the following vowel is high. If we assume such a process, we will have intermediate forms such as (11), (12), and (13).

(11) // na + i + en // (12) // na + u + en // (13) // na + y + en //

Here, three vowels have met, resulting in a context in which both vowel elision and glide formation can apply. If glide formation applies first, hence changing the vowels /i/, /u/, and /y/ into [j], [w], and [ɥ] respectively, there will be no motivation for vowel elision to apply since the triggering context (hiatus) will no longer exist, and undesirable forms like *[najen], *[nawen], and *[naɥen] will be produced. Therefore, we have to assume that vowel elision is applied first, deleting the vowel /e/ of the suffix, in which case the next intermediate forms will be //na+i+n//, //na+u+n// and //na+y+n//. Now, there is only one case of vowel hiatus, in each of these forms, which is then resolved by the application of glide formation, creating the correct forms [najn], [nawn], and [naɥn] respectively.

Results and Conclusion: The application of glide formation as the first process would bleed the application of vowel elision, and since the reverse order leads to correct forms, the interaction of these processes is that of "counter-bleeding". Such cases are problematic in theories like Parallel Optimality Theory, in which changes are made at once and on a single level. This study shows how Parallel OT is not able to deal with such issues and it proposes theories like Stratal Optimality Theory, or OT-Candidate Chains due to their gradual nature.

Selected References

- Fattahi, Mehdi (2016). *Verbal Phonology in Kurdish: An Optimality-Theoretic Account*. Unpublished Doctoral Dissertation. University of Tehran, Tehran, Iran.
- Kiparsky, Paul (1973). Phonological Representations. In Osamu Fujimura (ed.), *Three Dimensions of Linguistic Theory*. Tokyo: TEC, pp. 1-135.
- McCarthy, John J. (2008). *Doing Optimality Theory*. Malden, MA, and Oxford, UK:Blackwell.
- Rakhieh, Belal A. (2009). *The Phonology of Ma'ani Arabic: Stratal or Parallel OT*. Unpublished Doctoral Dissertation. University of Essex.
- Wolf, Matthew (2008). *Optimal Interleaving: Serial Phonology-Morphology Interaction in a Constraint-Based Model*. Unpublished Doctoral Dissertation, University of Amherst, Amherst, MA.
- Wolf, Matthew (2011). Limits on Global Rules in Optimality Theory with Candidate Chains. *Phonology*. 28, 1, pp. 87-128.