



## Compensatory Lengthening in Central Kurdish: An Opaque Phenomenon in Harmonic Serialism

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### 1. Introduction

Kurdish, a northwestern Iranian language (Dabir Moghaddam, 2012, p. 598), holds a unique position among Iranian languages. Some scholars (McCarus 2009, p. 587) argue that Kurdish does not belong to a single, uniform group within Iranian languages, while they agree that this language occupies an intermediate position between the western, northern, and southern Iranian dialects. As such, the term “Kurdish” can be seen as a cover term for closely related language varieties in the western group of Iranian languages. Three main dialects of Kurdish are Northern Kurdish (Kurmanji), Central Kurdish (Sorani), and Southern Kurdish (Kalhori) (Blau, 1989, pp. 542-544 and McCarus, 2009, p. 587; Dabir Moghaddam, 2012, p. 601).

The present study investigates whether compensatory lengthening exists in the Kurdish language. If compensatory lengthening does occur, the deletion of a mora-bearing consonant in the coda position would result in a stray mora. This stray mora would then reconnect to its preceding vowel in languages where the coda consonant triggers Compensatory Lengthening (CL) and the vowel is the target. In Kurdish, there are tautosyllabic clusters with CL, such as /ʃahr/: [ʃar] ‘city’ and /taʃm/: [tam] ‘taste’, as well as heterosyllabic clusters with CL, like /lah.dʒa/: [la.dʒa] ‘accent’ and /maʃ.na/: [ma.na] ‘meaning’. The primary focus of this study is to determine whether these two consonants are moraic in Kurdish and to identify the threshold for moraicity in this language. It is also important to note that these words are not native, so they can be seen as a nativization process adapted by native speakers of Kurdish.

CL has been extensively studied in many languages, including Persian and Kurdish. In Persian, this process has been examined from various perspectives;

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Darzi (1993) and Kord Zafaranlu Kambuziya (2000) conducted general investigations; Bijankhan (2000) and Sadeghi (2007; 2019) adopted a perceptual viewpoint, while Shademan (2005) approached it phonetically, and Safaie-Qalati (2013) used a cognitive approach. Among these works, only Mahdavi et al. (2019) investigated this process within the framework of Stratal OT (STOT).

In terms of Moraic theory, compensatory lengthening was studied by Alinezhad & Zahedi (2009) in Sorani Kurdish, Badakhshan & Zamani (2015) in Kalhori Kurdish, Sobati (2018) in Ilami Kurdish and Ahmadi Varmazani & Fattahi (2019) in Kermanshahi Farsi.

## **2. Materials and methods**

This research is focused on the Sorani Kurdish dialect spoken in Marivan, a city situated in Kurdistan province, Iran. A small corpus of words exhibiting consonant lengthening was compiled, along with similar words from various dictionaries. In these words, the first consonant of the consonant clusters is removed, resulting in compensatory lengthening of the preceding vowel. These words were prepared and phonologically transcribed by the authors. One of the authors, a native speaker of this dialect, used his intuition to assess the well-formedness of the data, thus validating the role of native speaker intuition in linguistic analysis. The article tests several theories regarding CL.

## **3. Results and discussion**

A detailed examination of the data revealed that in biconsonantal clusters (both homosyllabic and heterosyllabic) where the first element was a pharyngeal or glottal fricative of non-native origin, specifically Arabic loanwords, speakers of Kurdish used a repair strategy that involved deletion of the glottal or pharyngeal fricative. This deletion was accompanied by an extension of the preceding vowel to maintain the word's mora count.

There is a moraicity threshold in a language that permits all segments more sonorous than this threshold to be moraic. Kavitskaya (2001) proposed a hypothesis for similar cases like Persian, suggesting that moraic consonants that are glottal and pharyngeal become approximants.

The processes of deletion and CL are sequentially applied to an input, subjecting it to two changes. Shaw (2009, p. 2) argues that Parallel Optimality Theory (POT) with two levels of input and output does not adequately explain CL, advocating instead for a derivational, step-by-step approach. CL can be best understood through the lens of the Candidate Chain Theory in Optimality Theory (OT-CC), which due to its phased nature, is well-equipped to explain such opaque processes. Theories such as OT-CC, Output-Output Correspondence, STOT, and Harmonic Serialism (HS) have been used to explain phonological opacity and derivation beyond one-step processes. The present study implemented HS for data analysis, which correctly predicted the optimal output, demonstrating both gradualness and harmonic improvement in the final stage of derivation.

It is important to note that the generator's performance is also limited, and it does not permit the production of candidates with significant differences from the input. Samko (2011, p. 7) considers parallel OT inefficient in explaining CL for two reasons: 1) a candidate with only deletion violates fewer faithfulness constraints than a candidate with both deletion and CL; 2) syllable and mora construction in OT are not necessarily present in the underlying form.

#### **4. Conclusion**

In Kurdish, the pharyngeal fricative /h/ and glottal fricative /ʕ/ in loanwords are the only moraic consonants considered approximants. The deletion of these consonants results in compensatory lengthening of the preceding vowel. CL serves as a nativization strategy in Kurdish loanword phonology. This strategy balances the markedness of clusters where the first element is /h/ and /ʕ/ by violating two faithfulness constraints against preconsonantal deletion and identity of vowel length. HS as a sequential theory within OT provides a justified explanation for these cases.

**Keywords:** compensatory lengthening; consonant deletion; Kurdish language; Optimality Theory; Harmonic Serialism