

Lenition in Kusaal: A Coda Mirror v2 account

This study provides a detailed description and analysis of the lenition patterns in Kusaal, a Gur language spoken in Northern Ghana. Lenition in Kusaal has thus far lacked both a descriptive and theoretical analysis. Niggli (2014) notes that /s/ alternates to [h] at compound boundaries but doesn't definitively categorise it as a case of lenition. Likewise, Asitanga (2021) proposes that the alternation between /s/ and /h/ might be considered an example of lenition. The current study focuses on the phonemes /d/, /t/ and /s/ which commonly manifest as [r] and [h], respectively. Based on a dataset consisting of 50 words gathered from transcribed folktales, the Kusaal dictionary, and my personal native intuition as a competent speaker of the language, I contend that /d/ and /t/ undergo lenition to [r] in intervocalic position, while this lenition does not occur within coda-onset clusters or at compound boundaries. In the case of /s/ lenition, the study shows that /s/ lenites to [h] in intervocalic positions but fails to lenite when it occurs at compound boundaries and in reduplication. I formalise the analysis within the theoretical framework of the Coda Mirror v2 by Scheer and Ziková (2010) which was originally proposed in Scheer and Ségéral (1999) and Element Theory (Backley 2011).

Data: Within the Kusaal dialects, an underlying /d/ lenites to [r] in intervocalic position, as demonstrated in (1). The distribution of [r] is restricted to only intervocalic and word-final initial positions in the language unlike [d] which has a wider distribution.

- (1) a. /asida/ [asira] 'truth'
 b. /ẽdug/ [ẽrug] 'annoyance'
 c. /idig/ [irig] 'untie'
 d. /kudug/ [kurug] 'trouser'
 e. /kɔdig/ [kɔrig] 'slaughter'
 f. /na:da/ [na:ra] 'millet'

In addition, a stem-final /d/ and /t/ lenite to [r] when followed by a vowel-initial suffix. In (2), a final /d/ changes to [r] when followed by the suffix *-ib*. Similarly, as shown in (3), /t/ lenites to [r] when followed by the suffix *-in*.

- | (2) Singular | Plural | (3) Noun | Locative <i>-in</i> |
|--------------|--------------------|------------|--------------------------|
| a. /sid/ | [sirib] 'husband' | a. /kɔkɔt/ | [kɔkɔrin] 'throat' |
| b. /nid/ | [nirib] 'person' | b. /yit/ | [yirin] 'house' |
| c. /kpa:d/ | [kpa:rib] 'farmer' | c. /yɔ:t/ | [yɔ:rin] 'termite mound' |
| d. /duʔad/ | [duʔarib] 'parent' | d. /nɔ:t/ | [nɔ:rin] 'mouth' |

However, lenition fails to apply in two positions; (i) in a coda-onset cluster, as shown in (4a-b) where /d/ follows /n/ or in (4c) where /d/ occurs as a geminate and (ii) at compound boundary as exemplified in (4d-f)

- (4) a. /dĩndɪ:s/ [dĩndɪ:s] 'glutton'
 b. /kɔlug/ # /daug/ [kɔldaug] 'long river'
 c. /yadda/ [yadda] 'faith'
 d. /kɔk/ # /dã:n/ [kɔkɔdã:n] 'chairman'
 e. /pɔʔa/ # /dit/ [pɔʔadit] 'bridegroom'
 f. /bɔt/ # /ã:lɔŋ/ [bɔtã:lɔŋ] 'torn sack'

In debuccalisation, /s/ becomes [h] when placed between two vowels as in (5). However, this change doesn't happen at compound boundaries or in cases of reduplication, as demonstrated in (6a-b) and (6c-d) respectively.

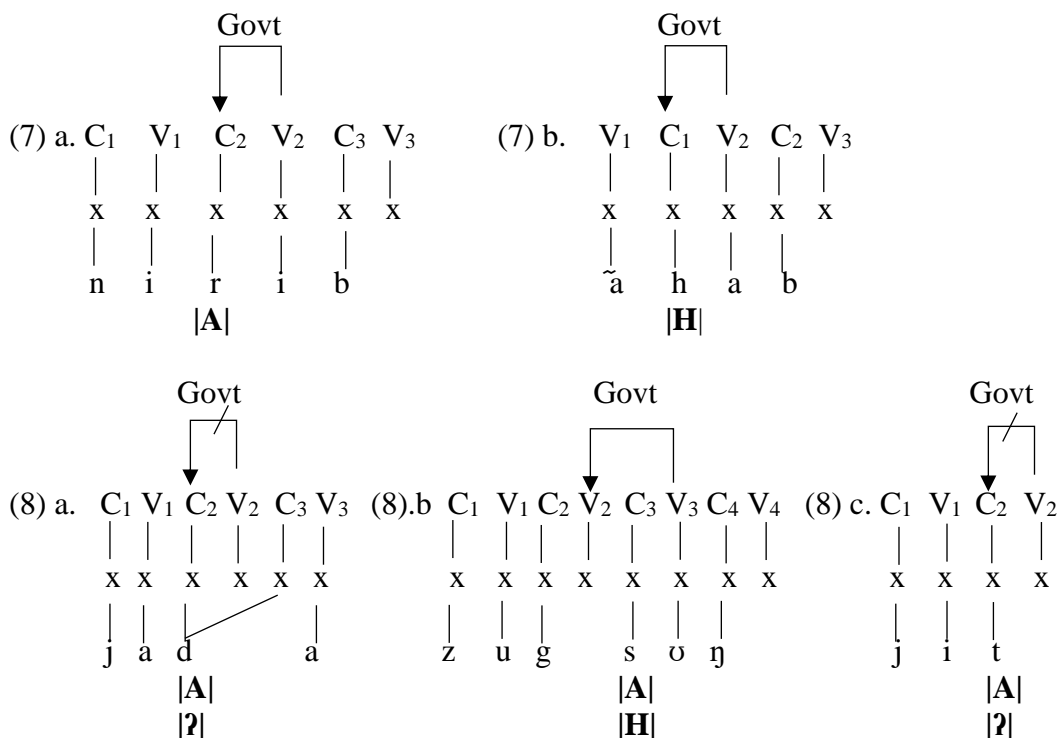
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|--------------------------------------|---------------------------------------------------|
| (5) a. /isig/ [ihig] 'to rise early' | (6) a. /fu:g/ + /sɔ:dɪŋ/ [fusɔ:roŋ] 'cover cloth' |
| b. /ãsrɪb/ [ãhãb] 'uncle' | b. /zug/ + /sɔŋ/ [zusɔŋ] 'good luck' |
| c. /mĩs/ [mĩh] 'sprinkle' | c. /sɔ:g/ 'between' [sɔsɔk] 'middle' |
| d. /ɔ:s/ [ɔ:h] 'warm up' | d. /sũf/ 'heart' [sũsũja] 'hearts' |

Analysis: First, the general observation is that the pattern of lenition of /d/, /t/ and /s/ occurs intervocalic position. The sonorisation /d/, /t/ → [r] occurs in an intervocalic position and the debuccalisation process, /s/ → [h] occurs in intervocalic position. Domain-initial and post-coda consonants do not lenite. Furthermore, at compound boundaries and in reduplication, the consonants in question do appear between two vowels. However, lenition

does not occur because these two vowels are located in separate domains, making the consonants to appear in domain-initial position.

From the Coda Mirror (Scheer & Ségéral 1999; Scheer & Ziková, 2010) account which is built around Lowenstamm's (1996) Strict CV approach, consonants in coda position are weak in the sense that they occur before empty nuclei, while consonants which stand in the opposite position of the coda where they occur after empty nuclei are strong. It is argued that lenition is orchestrated by a government and licensing; the former suppresses the segmental expressing of its target while the latter provides support. A coda mirror consonant which stands in the strong position is ungoverned as its nucleus governs a preceding empty nucleus and hence cannot be governed at the same time but can only be licensed. Consonants in the weak position such as codas occur before an empty nucleus, they can neither be governed nor licensed. Intervocalic consonants are governed but not licensed, hence consonants in this position are vulnerable to lenition.

Following this theoretical framework and adopting the element-based perspective (as presented by Backley 2011), I examine sonorisation and debuccalisation as processes involving the loss of elements within a governed position. In Government phonology, segments consist of elements instead of features. The current version of Element Theory (Backley 2011) assumes six elements: the three resonance elements **[A, I, U]** and the three manner elements **[ʔ, H, L]**. The same set of six elements is found in both vowels and consonants. In vocalic expressions, **[A]** represents low dimension and it is also present in coronal consonants, **[I]** represents high and frontness in vowels and it is found in palatals in consonants and **[U]** represents back and roundness in vowels and present in labials. The elements **[ʔ]**, **[H]** and **[L]** are associated with glottalisation, voicelessness and nasality in vowels and they found in stops, fricatives and voiced consonants respectively. I propose that /d/ is represented as **[A ʔ L]** and /t/ contains **[A ʔ]**, while /s/ is represented as **[A H]**. The outcome of the loss of **[ʔ]** is [r], which is represented as **[A]**, and the loss of **[A]** results in [h], represented as **[H]**. I propose this representation in (7a), where C₂ occupied by [r] is governed by V₂ which is occupied by [a] and in (7b), C₁ position is governed by V₂ because V₁ is ungoverned. However, in (8) there is no lenition in that in (8a), C₂ cannot be governed by empty V₂, it can only be licensed. Similarly, in (8b) C₃ occurs in a licensed position as V₂ is called to govern to a preceding empty V₃, hence V₃ cannot govern C₃ at the same time. Again, in (8c), /t/ under C₂ fails to lenite because the potential V₂ does not have the ability to govern or license as it is empty.



[L]

Conclusion: The study sets out to provide a description and theoretical analysis of lenition in Kusaal. The findings indicate that the phonemes /d/, /t/, and /s/ undergo lenition, resulting in [r] and [h]. The analysis reveals that consonants subjected to lenition are situated in governed positions which include intervocalic position, and that lenition involves loss of [ʔ] and [A] elements.

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