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CORONAL ASSIMILATION IN DAGBANI

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Abstract

This paper examines Coronal Assimilation in Dagbani, a Mabia language spoken in the northern part of Ghana. Premised on the theory of Feature Geometry, the paper supports the idea that a place node dominates the class nodes Labial, Coronal and Dorsal. The places of articulation considered to be Coronal in Dagbani are alveolar (e.g. /t, d, s, z, n, l/), flap (e.g. /ɾ/), palato-alveolar (e.g. /ʧ, ʤ, ʃ, ʒ/), and palatal (e.g. /j, ɲ/). The paper discusses how Coronal nasal /n/ assimilates the Coronal features from a flap /ɾ/ consonant that precedes it and shows that the flap consonant triggers the process provided that no coronal consonant intervenes. It suggests that the alveolar nasal /n/ is [+ anterior, + distributed] while the consonant /r/ is [-anterior, -distributed] in Dagbani and the assimilation rule simultaneously spreads flap features dominated by the Coronal node. It also explores assimilatory process of coronal harmony arguing that the harmony, which is triggered by a suffix morpheme /-da/ or /-si/, is not blocked by an intervening [-continuant]. It concludes by discussing Vowel Copy Rules as assimilatory processes that accounts directly for a common phenomenon where all features of a vowel spread to a preceding or following vowel without regard for the nature of the intervening consonant(s).

Keywords: *Dagbanli, Assimilation, Coronal, Labial, Dorsal*

Introduction

Clements (1985) argues that only certain features assimilate together and that the different feature groups that assimilate together are defined by the nodes in the feature tree. Sagey (1987) proposes that a rule spreading two features, X and Y, actually spread[s] some node R that dominates X and Y, as in (1a) and prevents spreading X and Y individually as in (1b) (cf. Halle 1995:19).

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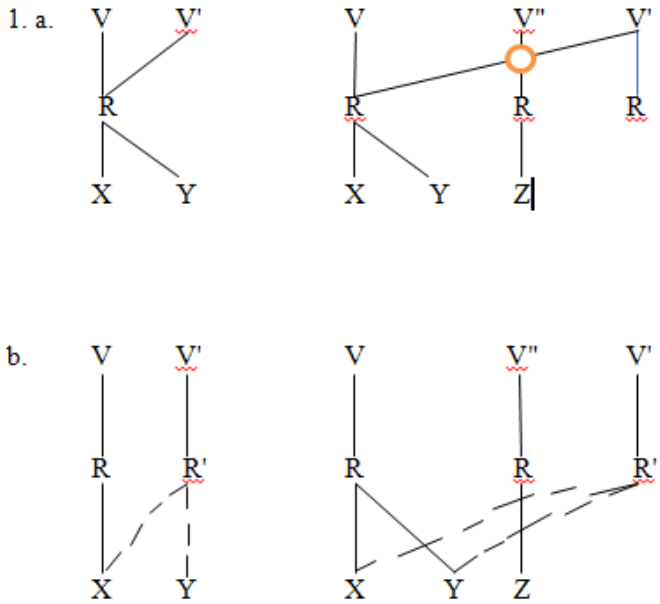

In (1) above, Halle (1995) explains that (1a) predicts that any intervening segment with the node R will block spreading of X and Y even if that segment is specified only for some other feature Z under R, and not for X and Y while (1b) predicts that only segments specified for X and Y will block spreading and that a segment specified only for Z under R will not block spreading of X and Y. Sagey (1987) discusses the vowel copy rules of Ainu and Barra Gaelic and concludes that the two languages differ with regard to the way feature groups are spread. The interest of this paper is (1b) which shows that assimilatory processes involves spreading individual features, or terminal nodes, in the feature tree, and that nonterminal nodes in the tree are spread to adjacent timing slots only in the case of total assimilation. Halle (1995) explains that when two or more (terminal) features are spread in a given rule, they must always be exhaustively dominated by a single node in the feature tree. Thus, the feature set [high, back, low] may be spread in a single rule, because these features are dominated by the node dorsal, whereas the set [anterior, distributed, and rounded] may not be spread in a single rule, because the three features are not exhaustively dominated by a single node in the feature tree. This, Halle (1995:20) states formally as:

2."The linking lines that are spread from one segment to another by an assimilation rule are those of terminal nodes in the tree, with the restriction that terminal nodes spread in a given rule are all and only those dominated by a single nonterminal node."

This paper therefore discusses assimilation processes that obey the convention stated in (2) focusing on Coronal Assimilation and Vowel Copy Rules. The feature Coronal captures natural classes involving sounds and the places of articulation considered to be coronal are dental (e.g. /Θ, ð/), alveolar (e.g. (/t, d, s, z, n, l/), retroflex (e.g. /r/), palato-alveolar (e.g. /ʃ, ʤ, ʃ, ʒ/), and palatal (e.g. /j/) and is usually defined as those sounds articulated with the front part of the tongue (Paradis and Prunet 1991b, Hume 1992, Hall 1997, 2007). The feature coronal is a direct replacement, in articulatory terms, of Jakobson's grave/acute when applied to consonants. It makes the further division of the place-of-articulation continuum which a binary system requires in order to achieve a distinction between four separate points (Hawkins 1992). The peripheral consonants (labials and velars) are [-coronal], and the central ones (dental, alveolar and palate-alveolar) are [+coronal]. There is new consensus that palatals are coronal (Hume 1992, and Hall 1997, 2007) as some linguists see palatal sounds as complex in the sense that they are both coronal and dorsal (Keating 1988b:98, Pulleyblank 1989:391, Robinson 2001:107–108). Hall (1997:10) argues that "palatal noncontinuants (i.e. stops, nasals, laterals) and palatal glides are noncomplex coronal segments, but that palatal fricatives like /ç ʝ/ are dorsal and not coronal.

In Feature Geometry, Coronal (as well as labial and dorsal) is considered to be a privative articulator node. In this approach, the following seven places of articulation are captured featurally in terms of articulators as in (3).

3. Seven places of articulation distributed among the three class nodes labial, coronal and dorsal

	labials	Dentals	Alveolars	retroflex	Plato-alveolars	palatals	velars
Coronal		√	√	√	√	√	
Dorsal							√
Labial	√						

According to SPE and many Feature Geometry treatments CORONAL is a distinctive feature for consonants and not for vowels. Hume (1992) and Clements and Hume (1995) as well as several other authors argue that front vowels are coronal (and central and back vowels are dorsal). This reanalysis of sounds like /i, e/ as coronal falls out from these linguists' definition of coronal as those sounds "involving a constriction by the front of the tongue" (Hall 2004).

Anterior

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The feature [anterior] distinguishes sounds in front of the alveolar ridge (/s z. . ./) from sounds produced behind the alveolar ridge (/ʃ ʒ. . ./). In Feature Geometry [anterior] (and [distributed] – are restricted to sounds that are coronal. Sagey (1986:277–278) [anterior] refers to a constriction formed by the tongue front either in front of the palate-alveolar region ([+anterior]) or behind it ([-anterior]). The matrices in (4) include seven places of articulation with their specifications for coronal and [anterior]. This system predicts that [+anterior] dentals and alveolars and [-anterior] retroflexes, palate-alveolars and palatals can pattern as natural classes.

4. Feature specifications for [anterior]:

	Labials	dentals	alveolars	retroflex	plato-alveolars	palatals	velars
CORONAL		√	√	√	√	√	
[anterior]		+	+	-	-	-	

The treatment of [anterior] in (4) implies that labials and dorsals cannot be marked for these features.

Distributed

The feature [distributed] accounts for the contrast between apical and laminal sounds in languages indigenous to Australia and India. According to Sagey (1986:278) [+distributed] describes a "constriction formed by the tongue front that extends for a considerable distance along the direction of airflow and [-distributed] to a constriction formed by the tongue front that extends only for a short distance along the direction of air flow." Thus, apical sounds are [-distributed] because they have a relatively short length of constriction and laminal ones are [+distributed]. [distributed] also accounts for the contrast between the two [coronal, +anterior] places of articulation: 'dentals' (e.g. /Θ/) and 'alveolars' (e.g. /t/). [distributed] is distinctive only for coronal sounds as illustrated with the following matrices in (5).

5. Feature specifications for [distributed] and [anterior]

	Labials	Dentals	Alveolars	retroflex	Plato-alveolars	palatals	velars
CORONAL		√	√	√	√	√	
[anterior]		+	+	-	-	-	
[distributed		+	-	-	+	+	

In Dagbani, Hudu (2018) observes that Dagbani has 22 phonemic consonants and 10 vowel phonemes describing the phonemes (e.g. (/t, d, s, z, n, l, ɾ, ʯ, ʤ, ʃ, ʒ, j/) as Coronal sounds and [tp, db, nm] as labio-coronal. Hudu noted that the segments under the coronal are distinctive in Dagbani and the labial-coronals [tp, db, nm] are respective variants of the labial-dorsals / kp, gb, ŋm/ in Tomosili and Nayahili Dialects, surfacing before front vowels (, Inusah, 2021, 2020, 2019; Hudu et al., 2009). The coronals /s, z/ also surface as [ʃ, ʒ] before front vowels while /d/ surfaces as a tap [ɾ] in intervocalic position (Inusah 2016). The front vowels /i, e, ɛ / are described as coronal while the back vowels /u, ʊ, o, ɔ/ are dorsal.

The rest of the paper looks at marked and contrastive features in section (2), coronal assimilation in section (3), coronal harmony in section (4) vowel copy rules in section (5) and conclusion in section (6).

Marked and Contrastive Features

The analysis in this paper will occasionally make reference to marked and contrastive features and feature values since there is no generally accepted characterization of this distinction. Halle (1995) assumes that the distinction between marked and contrastive features derives from the universal constraints that determine the phoneme inventory of each language and based on Calabrese's assertions, the most important of these constraints are universal marking statements of the type illustrated in (6).

6. a. [-son, + slack vf] in env. [_____, + cons]

b. [-nas, +lat] in env. [_____, + cons, + son] (cf. Halle 1915:20)

It is observed that the universal marking statements in (6) functions as a filter that excludes the co-occurrence of a particular pair of feature values. While (6a) excludes voiced obstruent's, (6b) excludes liquids of the /l/ type. Dagbani has a set of voiced (e.g. /b, d, g/) obstruent's, so the language deactivates the marking statement in (6a) and since it has both lateral and nonlateral liquids (e.g. / l, ɾ/), it also deactivates marking statement (6b).

Halle (1995) notes that the marking statements do not only restrict the phoneme inventory of a language but also affect the operation of its phonological rules as illustrated in (6), there are phonological rules that have access only to marked feature values, that is, to feature values appearing in marking statements specifically deactivated in the language in question. Hall (2007) assumes that if a feature is distinctive in a language then only those sounds for which it is distinctive are marked underlyingly for that feature. For example, Dagbani has a voicing contrast for stops (e.g. /p t k/ vs. /b d g/) but not for nasals (e.g. only /m n ŋ/ are present), only the stops are underlyingly [±voice] and the nasals are unspecified for that feature (Inusah, 2021). Therefore, since Dagbani has voiced obstruents, the marking statement (6a) is deactivated in Dagbani and [+slack vocal folds] is a marked feature value in the language. One may conclude here that only marked values of features are visible.

In this case, what appears to be the majority of phonological rules have access to the less circumscribed set of contrastive features. This set is made up of every marked feature value [αF] admitted in the language and its opposite [-αF]. A good instance is the role played by contrastive features provided by the well-known /l/-Dissimilation rule of Latin, which converts the [+lateral] /l/ into its [- lateral] counterpart /r/ if an /l/

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figures anywhere earlier in the word: for example, *nava-lis* but *aliment-ar-is, semin-al-is* but *line-ar-is* (Halle 1995). The rule is blocked if an /r/ intervenes between the two /l/s, as in *litor-al-is, flor-al-is*. The rule can be stated quite simply as in (7).

7. [+lat]→ [-lat] in env.[+ lat]_____

This statement presupposes that each feature is represented on an autosegmental plane of its own, as is assumed in all versions of feature geometry. By assuming in addition that /1/-Dissimilation a rule for which contrastive features are visible. It is observed that the feature [suction] is systematically excluded in Dagbani; this is formally taken into account by assuming that the marking statement in (8) is deactivated in the language and therefore become [- suction].

8. *[+ cons, + suction]

Halle (1995) indicates different treatment appears to be required in the case of phonemes in whose production certain articulators (and the features they execute) are excluded. A Coronal articulator plays a key role in the production of Labial or Dorsal consonants in Dagbani. The ten phonemic consonants in the language are subjected to a constraint limiting to one the number of designated Place articulators that may be involved in their production. It is argued that such a constraint is included among the universal marking statements discussed above. In this regards, the features dominated by the excluded articulators do not take part in the production of the consonants in question and do not figure in the fully specified representations of these phonemes. Although all the ten phonemic consonants in Dagbani are [-suction] in their full specification, the full specification of the consonants include only the features of the designated articulator, and none of the features executed by the other two place articulators. The three major classes of Dagbani consonants, therefore, have the feature specifications in (9).

9.	**Labial**	**Coronal**	**Dorsal**
	[-round]	[+ ant]	[+back]
	[- dist]	[- low]	
	[+ high]		

Among the place feature (labial, coronal and dorsal) stated in (9), it is proved in many studies (e.g. Kean, 1976; Mohanan, 1993; Paradis & Prunet, 1991; Prince & Smolensky, 1993) that the coronal is deemed the unmarked place. Hudu (2018) states that regardless of which of these place features (labial, coronal and dorsal) is assumed to be the most marked, all conceptualisations of the complexity diagnostic would predict that the most marked segment is one with more than one place specification when compared with segments with only one of theplace features specified in the complex segments. The feature which can vary in this way is nearly always the place of articulation, and the sounds concerned are commonly those which involve a complete closure at some point in the mouth, that is, plosives and nasals. Assimilation involves the process by which a sound acquires.

Coronal Assimilation

Assimilation is a phonological process that takes place when one sound changes its character in order to become more like a some of the features of (other) adjacent sound or by which the sound changes to become phonologically more like the adjacent sound (Hawkin 1992). Bakovic (2007:335) states, "a phonological process is called an assimilation if, as a result of its application, two or more segments in a form agree in their value for some phonological feature(s) or feature class(es)." The assimilation processes are classified roughly into two main types that include local assimilation (LA) which involves two neighbouring sounds and long-distance assimilations (LDA) which involves segments that are not neighbouring sounds.

The assimilation processes that sheds interesting light on the issues under discussion is assimilation in Dagbani in which a ocronal nasal (eg /n/)) assimilates the coronal features from a flap consonant (e.g. /r/) that precedes it. The process in Dagbani shows that the nasal can be arbitrarily far away from the flap consonant that triggers the process, provided that no coronal consonant intervenes and this does not violate the LDA which involves segments that are not neighbouring sounds. A few illustrative examples are given in (10), and the feature composition of the major classes of coronal consonants in Dagbani is presented in (11).

10. kárɪn-dá 'read.impf'
járɾn-dá 'misbehave.impf'
lárɪn-dá 'smear.impf'
bɪrɪn-dá 'confuse.impf'
gaɾinga 'kind of snake'
paɾɪn-dá 'continuously'
saɾigɪn-lɪ 'slippery'

11.

	ɾ	N	t	d	s	z	l	ʧ	ʤ	ʃ	ʒ	J	ɲ	
[anterior]	-	+	+	+	+	+	+	-	-	-	-	-	-	
[distributed	-	+	-	-	-	-		-	-	+	-	+	-	

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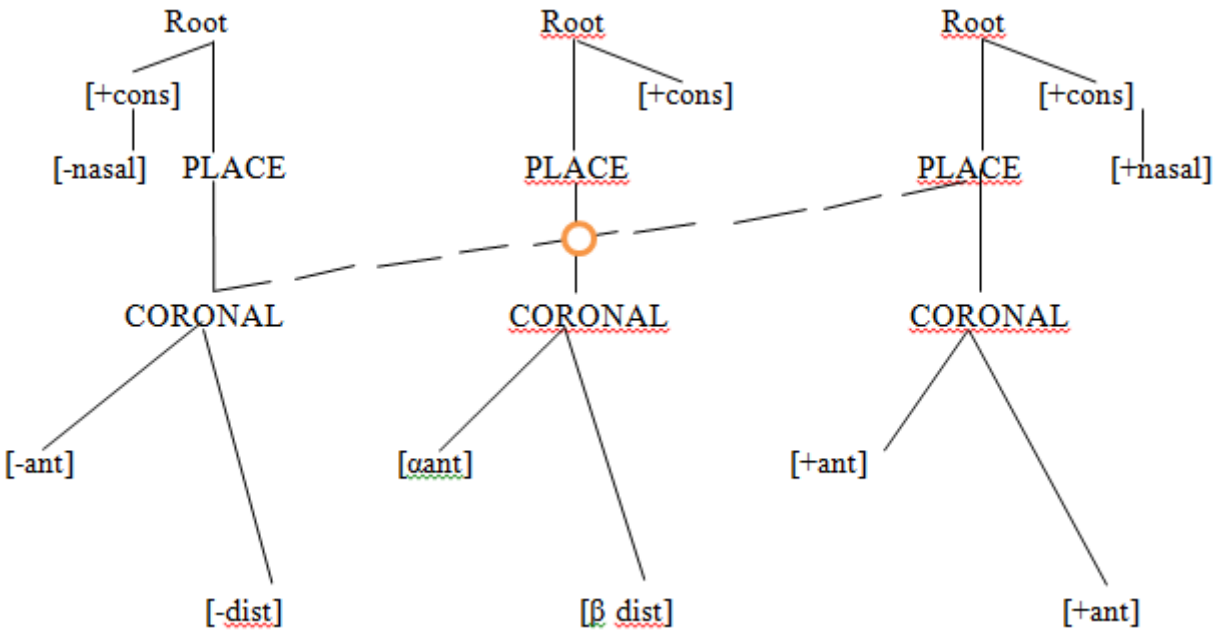
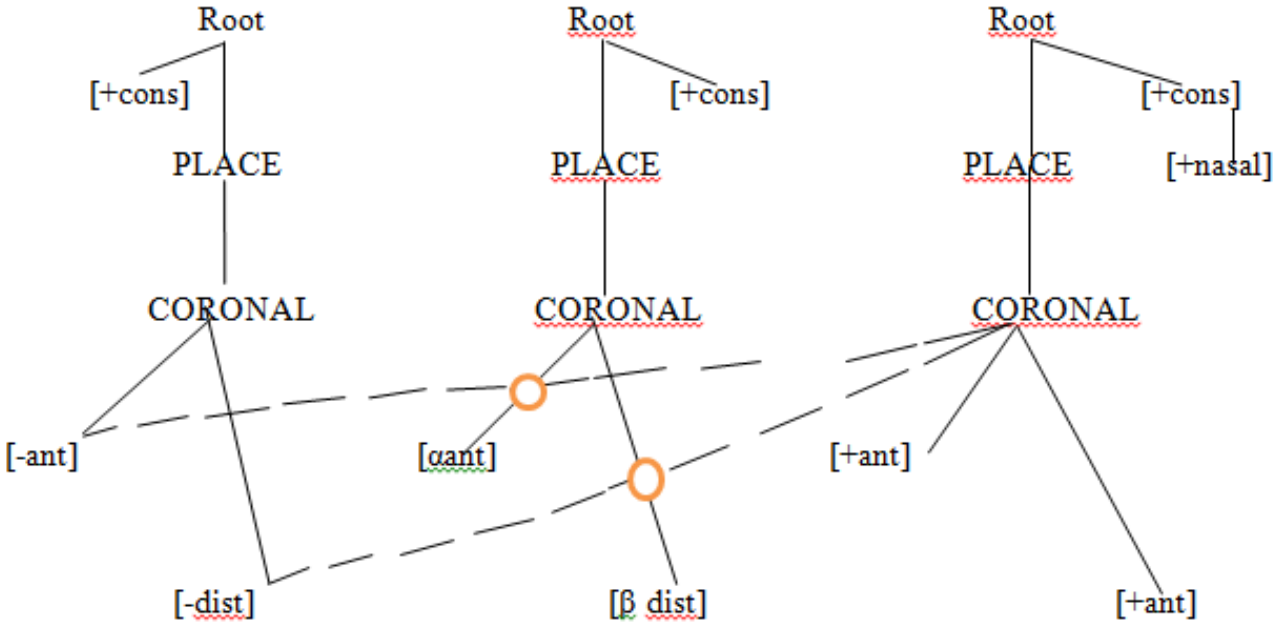
This suggests that /n/ is [+anterior, +distributed], and /ɾ/ is [- anterior, - distributed]. Similarly, in Sanskrit, /n/ is [+anterior, +distributed], and retroflex consonants are [- anterior, - distributed]. Halle (1995) explains that assimilation rule simultaneously spreads both features dominated by the coronal node where nonterminal nodes of trees are allowed to spread freely, the process is formally implemented by drawing a line linking the coronal node of the retroflex consonant to the place node of the nasal. The tree diagram in (12) graphically represents the case where a coronal intervenes between the target and the trigger of the assimilatory process.

12.



It is observed from (12) that the same predictions are made when the assimilation rule obeys the restriction in (2), except that in this diagram the Line-Crossing Constraint violates the planes containing the lines associating the terminal nodes [anterior] and [distributed] with the Coronal node dominating them, as illustrated in (13).

13.



The broken lines in (13) represent links that are established by the different assimilatory processes.

Coronal Harmony

A harmony system is a term which encompasses consonant harmony, vowel harmony, and vowel-consonant harmony. Archangeli and Pulleyblank (2007) notes that the most commonly observed pattern in phonological systems is that two or more segments must resemble each other with respect to some feature(s) and there are two ways this can account for 'harmony': i. all segments within a word show agreement for the harmonic feature and ii. all vowels within a word show agreement for the harmonic feature. Rose and Walker (2011) also explain that

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"[h]armony refers to phonological assimilation for harmonic feature(s) that may operate over a string of multiple segments. This can be construed in one of two ways in which two segments may interact "at a distance" across at least one (apparently) unaffected segment, as shown for consonant harmony" in (14a). "Or, a continuous string of segments may be involved in the assimilation, as shown for vowel-consonant harmony in (14b)".

14. a. consonant harmony Cx Vy Cz → Cz Vy Cz

b. Continuous Harmony Cx Vy Cz → Cz Vz Cz

This paper provides a description of the basic patterns of consonant harmony systems outlined in (14a), with a focus on the triggers (segments that cause harmony) and targets (segments that undergo harmony).

Rose and Walker (2011) define a consonant harmony as assimilation between consonants for a particular articulatory or acoustic property operating at a distance over at least another segment. Consonant harmony may involve both alternations in affixes and morpheme structure constraints (Shaw 1991; Hansson 2001b, 2010; Rose and Walker 2004). The most commonly attested type of consonant harmony is sibilant harmony (Rose and Walker (2011), which requires sibilant coronal fricatives and affricates to match for tongue tip/blade posture and location. In Ts'amakko, a Cushitic language of Ethiopia (Savà 2005), the causative suffix *-as* is realized as [aʃ] when palato-alveolar fricatives or affricates appear in the preceding stem. Sibilant harmony operates across vowels and non-sibilant consonants, including other coronals and intervening segments do not block and do not participate in the harmony

Halle (1995) notes that the competing notational conventions differ in their characterizations of the consonant harmony process of Tahltan, an Athapaskan language spoken in British Columbia. Dagbani has thirteen segments of Coronal consonants given in (15):

15. Features for Coronal Consonants

	ɾ	N	ɲ	t	d	l	z	s	ʧ	ʤ	ʃ	ʒ	J
[continuant]	-	-	-	-	-	-	+	+	+	+	+	+	+
[anterior]	-	+	-	+	+	+	+	+	-	-	-	-	-
[distributed	-	+	+	-	-	-	-	-	-	-	+	-	+
[lateral]	-	-	-	-	-	+	-	-	-	-	-	-	-

Following the features for coronal in (15), Dagbani has two coronal series as shown in (16) below:

16. Dagbani has four Coronal series

	N	nd	ns	*nl
		d	s	l
[continuant]	-	-	+	-
[anterior]	+	+	+	+
[distributed	+	-	-	-
[lateral]	-	-	-	+

The first two series are [-continuant] and the last one [+continuant]. The status of the Coronal features [anterior] and [distributed] in Dagbani differs in [+continuant] and [-continuant] phonemes. The features [anterior] and [distributed] are contrastive for [+continuant] Coronals, but noncontrastive for their [-continuant] counterparts. The feature [lateral] is contrastive for [- continuant] coronals, but no contrastive for their [+ continuant] counterparts.

The assimilatory process of interest in this discussion is coronal harmony, and for the rule (Halle 1995) implementing this process only contrastive features are visible. Shaw's (1991) states that "[t]he harmony is directional, spreading from right to left". In Dagbani, the triggers and targets of the process are /d/ and /s/ as composed in nd and ns series and in the process, it is only the place of articulation that spreads but not the manner It is observed from the data in Dagbani in (10) that both Coronal features can spread simultaneously; this is illustrated in the data in (17) and represented in (18).

17. a

Root.sg	Plural	Gloss
tíŋ	tín-sí	'towns'
lóŋ	lòn-sí	'drums'
báŋ	bán-sí	'bracelets'
siŋ	sín-sí	'pots'
kòŋ	kòn-sí	'lepers'

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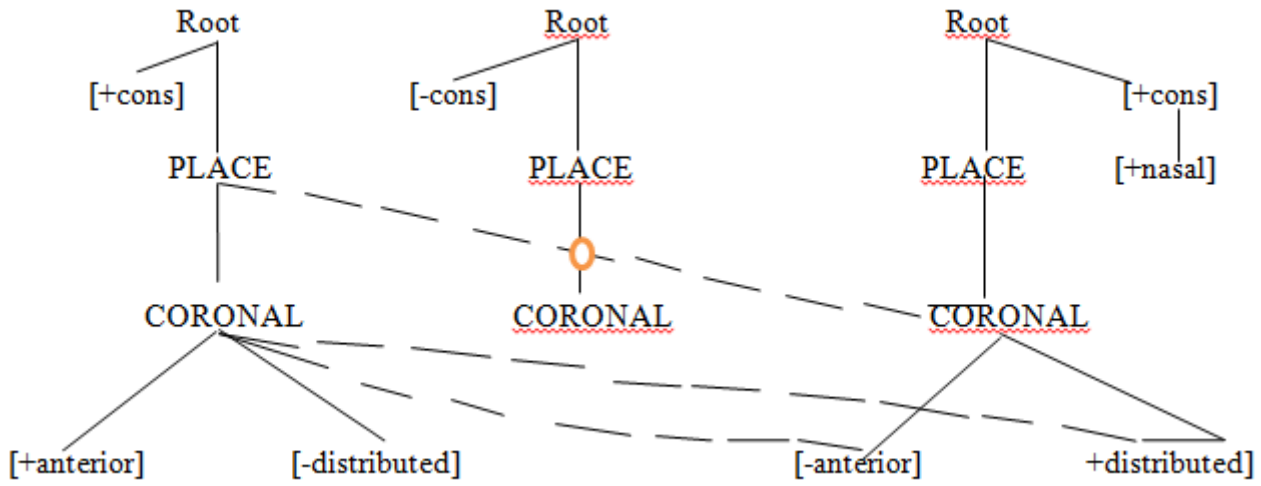
b.

Root.SG		Gloss
bɔ̀hɨ̀m	bàhɨ̀n-dá	‘learning’
láhɨm	láhɨ́n-dá	‘put together’
kárɨ́m	kárɨn-dá	‘reading’
sáhɨ̀m	sáhɨ́n-dá	‘spoiling’

As seen in the data in (17), the process is triggered by the suffix morphemes –si and –da changing the dorsal nasal /ŋ/ in (17a) and the labial nasal /m/ to the target coronal nasal /n/ which acquires the coronal place features from the coronal stop /d/. The coronal features [anterior] and [distributed] spread from right to left and the harmony is not blocked by an intervening [-continuant] Coronal as seen in (18).

18.



It observed in (18) that in Dagbani the assimilating coronal features are not contrastive for [- continuant] coronals and hence are invisible, since only contrastive features are visible to the rule of coronal harmony. The single broken line that links the coronal to the place portrays the process in the standard notation and the two broken lines connecting the features [anterior] and [distributed] nodes with the Coronal node of the first segment show the process in conformity with (2). The simultaneous spreading of the coronal features [-anterior] and [+ distributed] from the last to the first phoneme does not violate the Line-Crossing Constraint since it is only an intervening Coronal consonant that results in a violation of the Line-Crossing Constrain. In effect, the Dagbani Coronal harmony process constitutes evidence in favor of the notational convention (2).

Vowel Copy Rules

Halle (1995) explains that the formalism for assimilatory processes proposed in (2) accounts directly for the common phenomenon where all features of a vowel are spread to a preceding or following vowel without regard for the nature of the intervening consonant(s). The notion is that a vowel is able to acquire the features of an adjacent vowel at a long distance across intervening consonants because the assimilated vowel features are primarily features executed by the Labial or Dorsal articulators, and that among consonants Labial and Dorsal features are generally noncontrastive and hence not visible to the most common phonological rules which have access only to contrastive feature. Dorsal and Labial features in vowels features, therefore, will spread freely across consonants, but the same features may not spread freely from one consonant to the next across an intervening vowel. This phenomenon of a vowel copy rules are discussed in Ito (1984), Clements (1986) and Sagey (1987). Ito (1984 and Sagey (1987) discussed the vowel copy rule of Ainu while Sagey (1987) compares the Ainu Vowel Copy process with the very similar process in the Barra dialect of Gaelic.

Dagbani has morphemes that are spelled out as vowel suffixes which function as number markers in nouns and adjectives stems as illustrated in (19): Hudu (2018) observes that the structure of Dagbani word is determined partly by its grammatical class (Olawsky, 1999; Miehe, 2012; Miehe et al., 2012; Hudu, 2018, 2016, 2014b) and explains that the typical simplex noun/adjective consists of a root bound to a nominal suffix. The suffix encodes number along with other semantic properties. Verbs, on the other hand, are largely free forms that may be inflected for aspectual or other markers.

19.

a.	doɾ-o	‘disease-sg.’	mol-o	‘announcement-sg
	daŋ-a	‘clan-sg’	laŋ-a	‘net-sg’
	zʊʔ-ʊ	‘head-sg’	dʊʔ-ʊ	‘pot-sg’
	pin-i	‘gift-sg’	bin-i	‘thing-sg’

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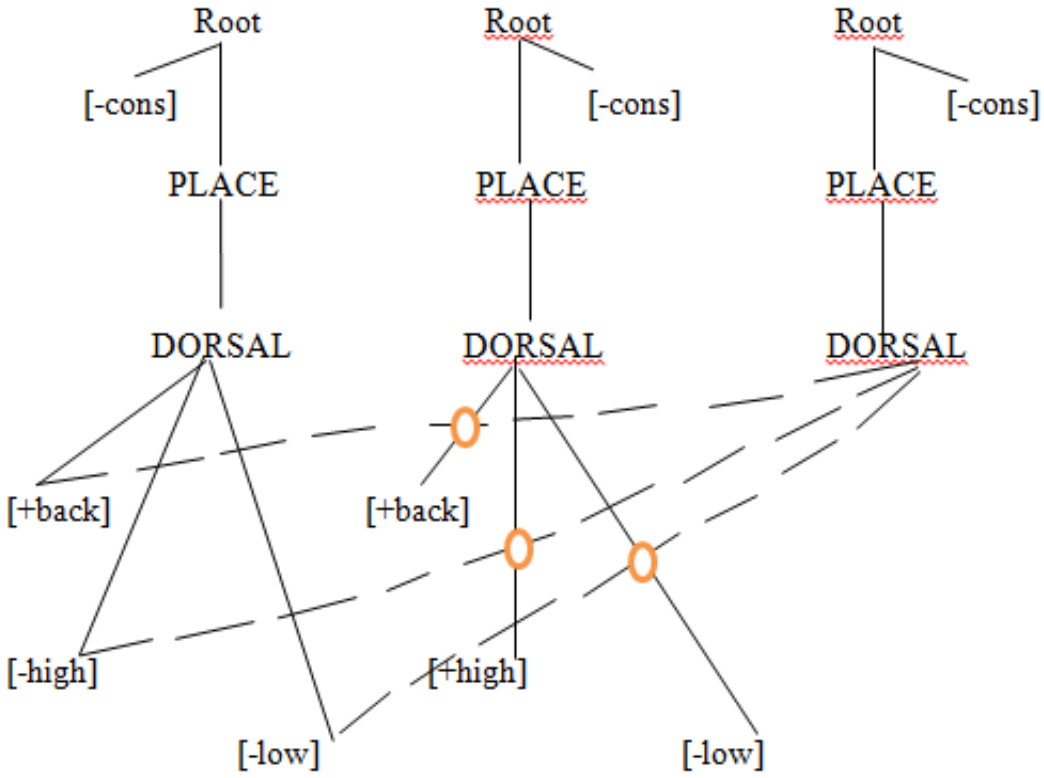
b. kor-e ‘desire-sg’
ʧor-e ‘blow-sg’
pal-o ‘plot-sg’
zɔn-o ‘stranger-sg’
tim-o ‘messanger-sg’

The Dorsal features that define the vowels in Dagbani in this case spread freely across intervening consonants as seen in the data in (3a). It is noticed in (3b) that though the vowels spread across the consonants, there is no copy of the vowels and the suffix vowel is realised as mid vowels. Halle (1995) argues that Dorsal features that define the vowels in Ainu spreads freely across intervening consonants while the vowel features does not spread across a [y w] glide since in Ainu these glides are high vowels and therefore possess a full complement of Dorsal features that prevent the spreading of the vowel features. The Ainu data in (20) show that there is no vowel copy across glides; instead, the suffix vowel is implemented uniformly by [e], the “default” vowel of Ainu. This is illustrated in (21):

20. a. mak-a ‘open’ tas-a ‘cross’ b. ray-e ‘kill’
ker-e ‘touch’ per-e ‘tear’ hew-e ‘slant’
pis-i ‘ask’ nik-i ‘fold’ ciw-e ‘sting’
pop-o ‘boil’ tom-o ‘concentrate’ poy-e ‘mi-x’
tus-u ‘shake’ yup-u ‘tighten’ tuy-e ‘cut’
(cf. Halle 1995:26)

Dorsal features [bach, high, low] that define the vowels [i, e, o, a, u] in Ainu will spread freely across intervening consonants, for the spreading will not violate the Line-Crossing Constrain and by contrast, it is to be expected that the vowel features will not spread across a [y, w] glide, since in Ainu these glides are actually high vowels and therefore possess a full complement of Dorsal features that will prevent the spreading of the vowel features.

21.



The phenomenon in (21) show that all features of a vowel [+back, -high,-low] spread to a preceding or following vowel.

According to Hudu (2018), Dagbani has twenty (20) phonemic consonants as in (22) and the vowel system in (23).

22.

LABIAL	p	B	m	f	v							
CORONAL	t	D	s	l[ɾ]	[ʃ]	[ʒ]	ʧ	ʤ	J	ɲ	j	ɲ
DORSAL	k	g	ŋ	[x]								

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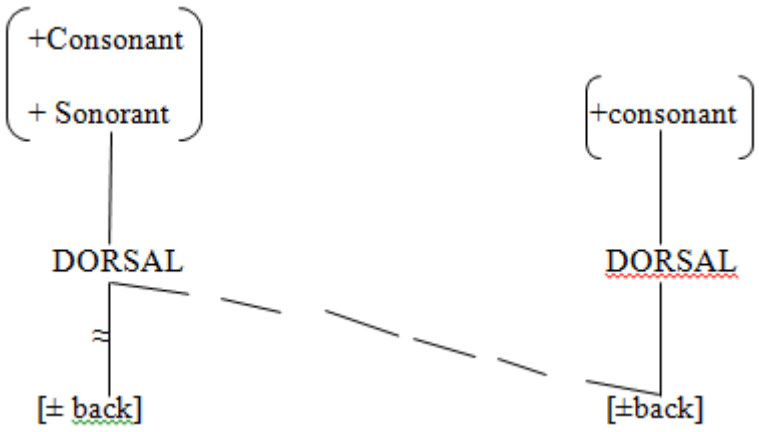
23.

	i	e	ɛ	a	ə	ɨ	ɔ	o	ʊ	u
[back]	-	-	-	+	-	-	+	+	+	+
[high]	+	-	-	-	-	+	-	-	+	+
[low]	-	-	-	+	+	-	-	-	-	-
[round]	-	-	-	-	-	-	+	+	+	+

In (22), with the exception of [+anterior], none of the features dominated by any Place articulator is contrastive for the consonants. Following the convention (2), for the vowels in (23), one may suggest that the dorsal features that define the vowels in Dagbani will spread freely across intervening consonants without violating the Line-Crossing Constraint as illustrated in (2). The paper suggests that the vowel features in Daagbani will spread freely across intervening consonants in contrast to the Ainu vowels that will not spread across a [y w] glide which are positional variants of the high vowels [i u] according to Halle (1995).

The sets of consonants in (22) show the existence of the binary features [± back] which contrast only the Labials systematically. The dorsals and Coronals have almost complete pairs, the only exception being the absence of [-back] in /n/ and of [+back] in /l/. Dorsal and Coronal consonants in Dagbani contrast with regard to the feature [back], but for Labial consonants, [back] is never contrastive as illustrated in (22). Dagbani sonorant consonants assimilate backness from an immediately following consonant and since only contrastive features are visible to the assimilation rule, this feature-changing rule involves both dorsals and coronals, but not labials, since, as just noted, backness is not contrastive for labials (Inusah, 2024). The backness assimilation rule is given by Clements in the form (24).

24. Clements (1986)



Notice that the representation in (24) show the rule in which epenthesis breaks up sonorant-consonant sequences by inserting a copy of the preceding vowel between the sonorant and the consonant. It is important to note that the constraint against insertion into linked structures does not hold for sequences that have undergone Backness Assimilation by rule (24).

Comclusion

The paper sought to discuss Coronal Assimilation in Dagbani supporting the idea that a place node dominates the class nodes Labial, Coronal and Dorsal. The paper discussed how a Coronal nasal /n/ assimilates the Coronal features from a flap /ɾ/ consonant that precedes it and showed that the assimilation process is triggered by /ɾ/ provided that no Coronal consonant intervenes. It showed that the alveolar nasal /n/ has the features [+ anterior, + distributed] while the flap /ɾ/ has the features [-anterior, - distributed] in Dagbani. In the assimilation process there is spreading of both features dominated by the Coronal node. The paper also explored the assimilatory process of Coronal harmony and argued that the harmony is triggered by a suffix number marker /-da/ or /-si/ in plural forms; this is not blocked by an intervening [-continuant]. The paper suggests that Vowel Copy Rules as assimilatory processes may account directly for a common phenomenon where all features of a vowel spread to a preceding or following vowel without regard for the nature of the intervening consonant(s).

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