

Umlauting Verbs in Albanian An Element-Theoretic Approach

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Abstract By pursuing an analysis couched in Element Theory and Magnetic Grammar, the paper presents a more elegant alternative to the traditional grammatical description and classification of Albanian verbs traditionally described as undergoing umlaut or metaphony, i.e. alternation of the stem vowel between *a/o*, *(j)e*, and *i* in various persons of the present stem paradigm. In contrast to the traditional account, the analysis developed herein has the advantage of being purely phonological, i.e. strictly modular. In addition, it provides a ready-made solution for the seemingly ‘morphomic’ pattern in the Albanian umlauting verbs present tense paradigm.

Keywords Element Theory. Magnetic Grammar. Metaphony (umlaut). Morphome. Verbs. Albanian.

Summary 1 Introduction. – 2 Analysis. – 3 Conclusion.

1 Introduction

In Albanian traditional grammar, verbs are classified into three conjugational classes, with a varying number of subclasses, according to various morphonological patterns that they exhibit (cf. Beci 2005, 124-5; Buchholz, Fiedler 1987, 88-95, 100 Demiraj 2002, 278-84; Newmark et al. 1982, 39; inter alia). Thus, Class I encompasses verbs ending in a vowel plus nasal suffix alternating with *-j*, such as *shko-j*: *shko-n* ‘to go’; Class II encompasses verbs ending in a consonant with zero suffix in the singular, featuring in turn characteristic stem-internal vowel alternations, such as *dal*: *del*: *dil*:- aor. *dol-a* ‘to come out’; and Class III encompasses verbs ending in a vowel featuring



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zero suffix in the singular, such as *di* ‘to know’. Their present tense paradigms are reproduced in Table 1.

Table 1 Present tense paradigms of the three conjugation classes in Albanian

Person	Class I		Class II		Class III	
	SG	PL	SG	PL	SG	PL
1	<i>shko-j</i>	<i>shko-jmë</i>	<i>dal</i>	<i>dal-im</i>	<i>di</i>	<i>di-më</i>
2	<i>shko-n</i>	<i>shko-ni</i>	<i>del</i>	<i>dil-ni</i>	<i>di</i>	<i>di-ni</i>
3	<i>shko-n</i>	<i>shko-jnë</i>	<i>del</i>	<i>dal-in</i>	<i>di</i>	<i>di-në</i>

Particularly interesting from the perspective of linguistic theory and description are the umlauting verbs in Class II, featuring stem-vowel alternations traditionally labelled umlaut or metaphony in the present tense paradigm, such as *dal*: *del*: *dil*- in Table 1, *flas*: *flet*: *flis*/*flit*- ‘to speak’, *shoh*: *sheh*: *shih*- ‘to see’ etc. Leaving aside the aorist forms, which feature stem-vowel changes of their own (i.e., the so-called ablaut or apophony), an umlauting Class II verb in Albanian may have up to three present stem allomorphs (the aorist stem being an additional, fourth one): one allomorph featuring the low or back vowel *a* or *o*, usually in the 1_{SG}/PL and 3_{PL} forms; one featuring the mid-front vowel *e* or the diphthong *ie/je* at least in the 2/3_{SG} form; and a third one featuring the high front vowel *i*, usually surfacing in the 2_{PL} form and all other verb forms built from the present stem (i.e. inflected forms of the mediopassive, the imperfect, and usually also the imperative). Cf. the present tense paradigms of three such umlauting verbs in Table 2, viz. *dal* ‘to come out’ (repeated below from Table 1) and *shoh* ‘to see’, featuring the maximum of three present stem allomorphs (alternating between the stem vowels *a*: *e*: *i* and *o*: *e*: *i*), and *mbjell* ‘to sow’, with two present stem allomorphs (alternating between *je* and *i*); the respective alternation patterns are outlined for easier reference.

Table 2 Present tense paradigm of Class II umlauting verbs in Albanian

Person	SG	PL	SG	PL	SG	PL
1	<i>dal</i>	<i>dal-im</i>	<i>shoh</i>	<i>shoh-im</i>	<i>mbjell</i>	<i>mbjell-im</i>
2	<i>del</i>	<i>dil-ni</i>	<i>sheh</i>	<i>shih-ni</i>	<i>mbjell</i>	<i>mbill-ni</i>
3	<i>del</i>	<i>dal-in</i>	<i>sheh</i>	<i>shoh-in</i>	<i>mbjell</i>	<i>mbjell-in</i>

In addition, the stem-vowel umlaut or metaphony in Albanian Class II verbs is usually accompanied by stem-final consonant mutations as well, i.e. the palatalisation of velars *k* and *g*, which surface as the

palatals *q* /c/ and *gj* /j/¹ in the vicinity of metaphonised stem vowel *i*, and a similarly distributed accompanying allomorphy in verbs with stem-final alveolars *t* and *s*. The present tense paradigms of two such umlauting and palatalising/sibilantising verbs, *djeg* ‘to burn’ and *flas* ‘to speak’, are reproduced in Table 3. (In terms of stem-vowel alternations, *djeg* behaves like *mbjell* and *flas* behaves like *dal*.)

Table 3 Present tense paradigm of Albanian verbs *djeg* and *flas*

Person	SG	PL	SG	PL
1	<i>djeg</i>	<i>djeg-im</i>	<i>flas</i>	<i>flas-im</i>
2	<i>djeg</i>	<i>digj-ni</i>	<i>flet</i>	<i>flis-ni / flit-ni</i>
3	<i>djeg</i>	<i>djeg-in</i>	<i>flet</i>	<i>flas-in</i>

Not all Class II verbs that feature stem vowels *a* or *o* undergo umlaut, however. For instance, in contrast to *dal* and *shoh*, verbs like *hap* ‘to open’ or *ngroh* ‘to warm up’ keep the stem vowel unchanged throughout the paradigm [tab. 4].

Table 4 Present tense paradigm of Albanian verbs *hap* and *ngroh*

Person	SG	PL	SG	PL
1	<i>hap</i>	<i>hap-im</i>	<i>ngroh</i>	<i>ngroh-im</i>
2	<i>hap</i>	<i>hap-ni</i>	<i>ngroh</i>	<i>ngroh-ni</i>
3	<i>hap</i>	<i>hap-in</i>	<i>ngroh</i>	<i>ngroh-in</i>

In other words, the affection of stem vowels in Albanian, at the first glance, appears to be highly idiosyncratic. Moreover, it is both scalar (with two or three degrees, viz. *e/ie/je*: *i* and *a/o*: *e*: *i*) and derivationally opaque, which raises important questions about its grammar and representation (such as, are we dealing with a single process at all, or more distinct ones, etc.). In addition, while inspecting the Tables 2-3 above, note that an L-shaped ‘morphomic’ pattern (in the sense of Maiden 2018) regularly emerges with umlauting verbs in Albanian: there is no single morphosyntactic feature that could define all forms sharing a particular allomorph and thus motivate their signature distribution. If no phonological explanation for the alternations in question can be provided either, as suggested by the traditional descriptive account and the contrast between the examples given in

¹ The exact phonetic realisation of the palatals varies significantly across dialects (cf. Gjinar, Shkurtaj 2003). Albanian is traditionally classified into Gheg and Tosk dialect groups.

Tables 2-3 vs. 4, then we are indeed left with a rather complex, ‘purely morphological’ system, with numerous conjugational subclasses, which have to be marked with special diacritics and/or independently stored in the lexicon.

By contrast, in this paper I will present an alternative analysis of the Class II umlauting verbs in Albanian, couched in Element Theory (ET), which restates the distribution of Class II allomorphs in terms of a regular, productive phonological process. In that way, the analysis pursued here provides a more elegant, phonologically based account for all synchronically observed patterns in the Tables 1-4 above, without the need for resorting to lexical or morphological diacritics and postulating different conjugation classes and subclasses, as is the case in Albanian traditional grammar. In particular, the ET analysis provided below draws on van Oostendorp and D’Alessandro’s (2018) notion of magnetism in grammar, and at the same time, supports it in turn with additional empirical evidence from Albanian.

2 Analysis

2.1 Setting the Stage: Albanian Verbs Revisited

An important preliminary step in the analysis to follow is a reconsideration of Albanian present tense morphology. Note that the traditional classification of verbs in Albanian, as laid out above, is entirely based on the descriptive notion of the stem as ‘the minimal unchanged part of the word’ throughout the paradigm (modulo Class II stem allomorphy). As argued by Trommer (2013) and Božović (2015, 393), however, this fails to capture the fact that all three classes of verbs essentially share the equal set of inflectional endings in the conjugation, with an essentially equal distribution of alternating forms in both Classes I and II, given that the segments *-j* and *-n* in Class I verbs practically alternate in the same persons where Class II verbs have stem-internal metaphony [tab. 5].

Table 5 Present tense paradigms in Albanian, reconsidered

Person	Class I		Class II		Class III	
	SG	PL	SG	PL	SG	PL
1	<i>shko-j</i>	<i>shko-jmë</i>	<i>dal</i>	<i>dal-im</i>	<i>di</i>	<i>di-më</i>
2	<i>shko-n</i>	<i>shko-ni</i>	<i>del</i>	<i>dil-ni</i>	<i>di</i>	<i>di-ni</i>
3	<i>shko-n</i>	<i>shko-jnë</i>	<i>del</i>	<i>dal-in</i>	<i>di</i>	<i>di-në</i>

Therefore, rather than segmenting the iotated/nasal part from the

vocalic stems in Class I, the consonantal segment *-j/-n* should be considered part of the stem allomorphy and not of the endings. Whereas the resulting distribution of stem allomorphs is the same as in Class II umlauting verbs, Class I endings, in turn, are identical to Class III, i.e. the actual vocalic stem conjugation. Under this account, there only is a single conjugation class in Albanian, with the inflectional endings *-Ø* (in the singular, notwithstanding the alternation), *-m(ë)*, *-ni*, and *-n(ë)* (in the plural, with phonotactically conditioned allomorphs *-im* and *-in* in Class II).

In addition to capturing an important generalisation that the traditional account misses, this analysis is historically more accurate and it can account for the dialectal forms as well as the standard ones. Namely, the unification of Class I and II verbs, as belonging to the same conjugation class with stem-internal alternations, is additionally supported by the fact that both feature an underlying 1sg ending *-i*, present overtly in some dialects in Class II verbs, as well as in a small class of standard language forms of verbs of motion, such as *ik-i* ‘to go’. In Class I verbs, this ending, in its asyllabic variant, is obscured by a sound change affecting the stem-final nasal, producing a palatalised *nj* /*ɲ*/ (< *n-j*) in Tosk Albanian, which is regularly reduced to *-j* in Gheg and from there taken over to the standard language, hence the 1sg and 1/3pl forms in *-j*. Similarly, in Class II, the iotation affects the stem-final *t*, producing the *t*: *s* alternation in the same persons, in verbs such as *flas* (< **flat-j*) ‘to speak’ (cf. Topalli 2007).

Having thus reformulated the traditional classification to more accurately reflect the distribution of verbal stem allomorphs, the alternation traditionally described as metaphony in Class II umlauting verbs likewise becomes part of a wider pattern of Albanian conjugation, that includes stem alternations in (now unified) Class I as well as Class II verbs. In the following section, I will introduce the basics of the theoretical framework, which will then allow me to develop an Element-theoretic analysis accounting for this pattern, in Section 2.3 below.

2.2 ET and Magnetic Grammar

In Element Theory (Backley 2011), phonological segments are structurally decomposed into six acoustically based monovalent primitives, called elements. For instance, vowels may be reduced to three elements of place, represented as *|A|* (present in non-high vowels), *|I|* (front vowels), and *|U|* (back and rounded vowels). Combined and on their own, these three elements produce the 7 vowels of standard Albanian, as in (1).

- (1) /a/ = |A|
 /i/ = |I|
 /u/ = |U|
 /e/ = |A.I|
 /o/ = |A.U|
 /y/ = |I.U|²
 /ə/ = no elements

The additional three elements, viz. |ʔ| (occlusion), |H| (high fundamental frequency), and |L| (low fundamental frequency), are used in combination with the place elements to account for manner and laryngeal properties in consonants. Elements may be headed, i.e. they combine asymmetrically to form segmental expressions (Backley 2017; 2021), thus determining in turn their phonetic interpretation by means of head-dependent relations between elements. Cf., e.g., the correlation of element headedness with different phonological classes of consonants in Table 6.

Table 6 Phonological characteristics of headed/non-headed elements in consonants (from Backley 2017)

element	acoustic property	phonological category	
		non-headed	headed
I	high F2 converging with F3	(some) coronals	palatals
U	low frequency energy in F1-F3	velars	labials
A	high F1 converging with F2	(some) coronals	gutturals
ʔ	abrupt drop in amplitude	occlusives	ejectives, implosives
H	aperiodic noise	obstruents	fortis/aspirated obstruents
L	periodic murmur	nasals	voiced obstruents

As noted by Backley (2017), however, headedness should be best viewed as an inherent property of individual elements, rather than as a relational property of whole expressions. This is, among others, corroborated by the representation of glides as simplex melodic expressions, whose phonetic realisation changes solely depending on whether their single element appears in its headed or non-headed form [tab. 7].

Table 7 Glides as simplex representations (from Backley 2017)

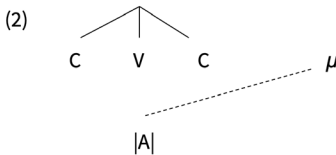
headedness	I	U	A
non-headed	[r]	[ɰ]	[ɹ]
headed	[j]	[w]	[r], [ɹ]

² For an alternative analysis, see below (§2.3.2).

Headedness of an element is marked by underlining, e.g. |A| vs. non-headed |A|. In terms of phonological processes, headed elements are strong, i.e. they are more resilient to alternation and change than non-headed elements.

ET is particularly convenient for a neat representation of various alternations at the subphonemic level, including such metaphonic changes like the alternation of /a/ = |A| with /e/ = |A.I|, or the accompanying consonant palatalisations, which can be easily captured by the insertion of a subphonemic element |I| (cf. below).³ As noted by van Oostendorp and D'Alessandro (2018) for Italic, however, the problem for ET is how to represent a scalar or derivationally opaque process, that seems to involve both insertion and deletion of various elements simultaneously; just as it is the case in Albanian metaphony, as described above in full, involving the alternation of both /a/ and /o/ with both /e/ and /i/, in various verbs.

In order to capture one such complex metaphonic system, involving both raising and lowering in Italic, these authors (D'Alessandro, van Oostendorp 2016; van Oostendorp, D'Alessandro 2018) develop an Item-and-Arrangement-based approach termed Magnetic Grammar (cf. further D'Alessandro, van Oostendorp 2020). Namely, the authors postulate magnetism effects, involving feature attraction or repulsion, in various parts of the grammar, in phonology and beyond. Thus, in Italo-Romance metaphonic systems, they assume that such magnetic effects of the certain suffixes are responsible for absorbing an element from the stem vowel. For instance, one such suffix, called '|A| Eater', the existence of which is postulated by D'Alessandro and van Oostendorp (2016), produces metaphony in nominal plural formation in Abruzzese, by virtue of the exponent of plurality being a floating empty mora that is capable of attracting the |A| element from the stem vowels /e/ = |A.I| and /o/ = |A.U|, thus metaphonising them to /i/ and /u/, respectively. However, as this mora itself is not linked to any higher-order structure, it remains unpronounced, along with the |A| element now linked under it (2).



3 In a similar fashion, velar palatalisation has been analysed within ET as the autosegmental spreading of the palatality element |I| by Zdziebko (2023), with data from Polish. A related analysis of Polish affricate palatalisation postulates integration of floating autosegmental place nodes, containing both |A| and |I| (Zdziebko 2025). For a similar, substance-free analysis of the various patterns of palatalisation in Czech, now see Cavarani, Vanden Wyngaerd 2026.

In what follows, I will use ET and the notion of magnetism to provide a similar unifying, principled account of the alternations in Albanian present tense conjugation, thus explaining away both stem-vowel metaphony and accompanying consonant mutations as merely surface effects of the magnetic behaviour of Albanian verbal suffixes.

2.3 Magnetism Effects in Albanian

2.3.1 A: e Verbs

Let us first consider the class of umlauting verbs with stem vowels alternating between /a/ and /e/ resp. /i/ (the *dal*-type). Their paradigms are reproduced below [tab. 8].

Table 8 Present tense paradigm of a: e verbs in Albanian

Person	SG	PL	SG	PL	SG	PL
1	<i>dal</i>	<i>dal-im</i>	<i>flas</i>	<i>flas-im</i>	<i>marr</i>	<i>marr-im</i>
2	<i>del</i>	<i>dil-ni</i>	<i>flet</i>	<i>flis-ni / flit-ni</i>	<i>merr</i>	<i>merr-ni</i>
3	<i>del</i>	<i>dal-in</i>	<i>flet</i>	<i>flas-in</i>	<i>merr</i>	<i>marr-in</i>

The traditional account, starting with the 1SG form containing /a/ (i.e. *dal*, *marr*, *flas*) as the basic form, is problematic on both descriptive and explanatory grounds. First of all, if the 1SG form is taken as the basic allomorph, the alternation would involve addition of the [I] element in the second and third person singular, and subtraction of the [A] element in the 2PL form, except in the verb *marr* ‘to take’, whose 2PL form is *merr-ni* (not *mirr-ni*). Likewise, verbs in *s* would alternate their stem-final consonant with *t* in the same persons (optionally in the 2PL form). This creates a ‘morphomic’ distribution (in the sense of Maiden 2018), which cannot be motivated on independent phonological or morphosyntactic grounds. Second of all, the analysis would have to postulate a palatal suffix capable of simultaneously triggering vowel raising and de-sibilantisation in the 2/3SG forms, which is rather unnatural. On the contrary, there

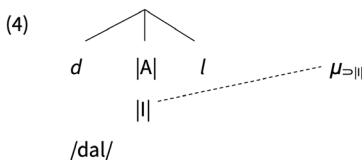
is historical and other empirical evidence for a 1_{SG} palatal suffix, as discussed above (§2.1), which sets the alternation in the opposite direction. Finally, the exceptional 2_{PL} form remains unexplained.

Therefore, instead of an alternation involving element addition, I propose to mirror van Oostendorp and D'Alessandro's (2018) approach to metaphony in Italo-Romance by element subtraction, with a suffix attracting a stem-vowel element by its magnetic force. Given that /e/ is the most complex of the stem vowels in Albanian, with both elements |I| and |A| that can be subtracted from it to derive /a/ and /i/, respectively, and that the 3_{SG} form in Albanian is in general the morphologically unmarked form, I will take it as the basic allomorph and derive all other allomorphs from it.

Akin to D'Alessandro and van Oostendorp's (2016) '[A] Eater' morpheme, I will assume a floating segment as the exponent of the 1_{SG} present tense suffix in Albanian, with an attracting effect towards the |I| element (i.e., an '[I] Eater').⁴ In Magnetic Grammar, elements are assumed to have attracting or repelling force toward other elements, dictating their combinability. This may be expressed as a diacritic on an element, as in (3) (from van Oostendorp and D'Alessandro 2018).

- (3) a. X_{repel} : X repels Y, a representation is ill-formed if X and Y occur in the same domain
 b. X_{attract} : X attracts Y, a representation is ill-formed if X and Y do not occur in the same domain
 c. X: there is no relation between X and Y

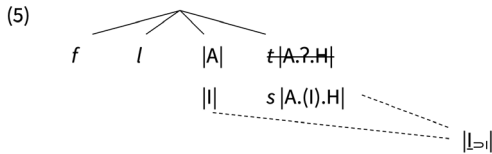
When such segment with magnetic effects towards the |I| element is suffixed in the first person singular in *dal*-type verbs, it attracts the |I|-element from the stem vowel /e/ = |A.I|, effectively lowering it to /a/, as in (4).



This attracting segment in Albanian is not empty, however. It seems to already consist of another floating element |I|. Namely, there is ample evidence from Albanian dialects for such suffix, surfacing

⁴ van Oostendorp and D'Alessandro (2018) further refine the account in D'Alessandro and van Oostendorp (2016) by postulating a weak vowel in Abruzzese suffixes, with both attracting and repelling effects towards |A| and |I|, respectively. This is not relevant, however, for our case at hand.

as *-i* in Class II non-umlauting verbs such as (dialectal) *mat-i* ‘I measure’, *kap-i* ‘I grab’, *rrit-i* ‘I grow’, as well as in a small class of verbs of motions, such as *ik-i* ‘I go’. In addition, accompanying consonant mutations in both Class I and Class II verbs corroborate the palatalising/assibilating effect of the 1SG suffix in Albanian, as discussed above (cf. Class I *shkon-j* in Tosk Albanian > *shkoj*, Class II **flat-j* > *flas*). As a floating element, this [ɪ] looks out for the closest position to be realised, if possible, and this is always the stem-final segment, which ends up palatalised (assibilated) by it; cf. the representation of *flas* ‘I speak’ in (5).⁵ Another overt manifestation of the floating [ɪ] is encountered in the plural, where it surfaces as the epenthetic vowel in 1PL *dal-i-m*, 3PL *dal-i-n* etc., again in combination with the lowering effect on the stem vowel /e/, whose element [ɪ] has been eaten by it.



This suffix, therefore, has the capacity to delink an [ɪ] element from the closest stem vowel as well as to link a floating [ɪ] element to the closest (stem-final) segment or insert it due to phonotactic constraints. The Albanian 1sg present tense suffix may thus be represented as in (6), consisting of a floating element [ɪ], with an additional affinity towards the [ɪ] element.

(6) 1SG.PRES $\Leftrightarrow$ [ɪ_{-ɪ}]

Incidentally, this is also part of the representation of present tense suffixes in the plural, which show the same magnetic effects, in addition to carrying other segmental material; cf. (7).

(7) a. 1PL.PRES $\Leftrightarrow$ [ɪ_{-ɪ}] m
b. 3PL.PRES $\Leftrightarrow$ [ɪ_{-ɪ}] n

⁵ Note also the structural parallelism between the Gheg sound change *nj* > *j* (as in *shkoj*) and the alternation of stem-final *t* with *s* (as in *flas*), which can both be alternatively described in terms of the deletion of the element [ʔ] from the manner structure (cf. Botma 2004, 79 for nasals and the representation in (5) for the *t*: *s* alternation). I intend not to pursue this particular analysis further at this point, but it should be stated that this parallelism can only be observed in ET and can be accommodated for in a similar fashion to the model provided in the paper.

By contrast, the 2_{PL} form seems to attract the |A| element instead (8).

- (8) d $||$ l $-ni \Rightarrow |A| \Leftrightarrow 2_{PL}.PRES$
 $|A|$
 /dilni/

That the 2_{PL} suffix indeed interacts with the |A| element is further corroborated by the *R*-blocking effect for stem-vowel metaphony, which is observed in the (seemingly exceptional) form *merr-ni* (not *mirr-ni*). Recall that glides are simplex representations of the place elements, whereby *rr* /r/ corresponds to a headed |A| (§2.2). Presuming that glides behave as vowels in structural terms, in a verb like *marr* ‘to take’, the closest |A| element to the 2_{PL} ‘|A|-eating’ suffix is the element contained by the stem-final glide *rr* /r/, not the stem vowel /e/. However, loosing it would result either in a non-existent or ill-formed representation, which is why the attracting property of the suffix stays unsatisfied. Alternatively, as a strong element it may be by itself protected from the attracting magnetic force of the 2_{PL} suffix *-ni*, by virtue of being headed and/or the sole element in the simplex melodic expression |A|.

In addition, unlike the first and the third person plural, the 2_{PL} suffix is unable to insert an epenthetic *i*, which means that it lacks a floating element, but it does (optionally) assibilate or palatalise the stem-final consonant (cf. *flis-ni* / *flit-ni* ‘you.PL speak’). The palatalisation here likely results from spreading the neighbouring |I| element from the stem vowel, as discussed in more detail below, in Section 2.3.3.

2.3.2 O: e Verbs

Let us turn now to the verbs with stem vowels alternating between /o/ and /e/ resp. /i/, i.e. the *shoh*-type verbs. Their paradigm is reproduced below, for easier reference [tab. 9].

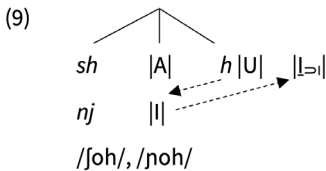
Table 9 Present tense paradigm of o: e verbs in Albanian

Person	SG	PL	SG	PL
1	<i>shoh</i>	<i>shoh-im</i>	<i>njoh</i>	<i>njoh-im</i>
2	<i>sheh</i>	<i>shih-ni</i>	<i>njeh</i>	<i>njih-ni</i>
3	<i>sheh</i>	<i>shoh-in</i>	<i>njeh</i>	<i>njoh-in</i>

In contrast to *a: e* verbs, the analysis here has to accommodate for the additional labiality/backness element |U|, which is present in

the vowel /o/ = [A.U]. In fact, this is a lexically well-defined class of verbs ending in *-h*, including *shoh* ‘to see’ and *njoh* ‘to know’. Etymologically, the stem-final fricative *-h* in Albanian comes from the inchoative/durative present tense formant **-sk*, originally consisting of a fricative and a velar part (cf. Ancient Greek *-σκω* etc.; Rix et al. 2001 [LIV]: 19 et passim), which may be responsible for the labialising/backing effect on the stem vowel. Namely, the acoustic affinity of labials and velars is corroborated by the common sound changes and phonological processes in which they form a natural class, supporting a representation of both classes by the same ‘dark’ element [U] (Backley, Nasukawa 2009; cf. also Ulfsgjorninn 2021).

A floating [U], for which there is etymological evidence, may be assumed, therefore, to accompany the present tense formant *-h* lexically in verbs such as *shoh* and *njoh*.⁶ When the element [I] is delinked from the stem vowel by the [I]-absorbing suffix, this floating [U] is linked to the now free position, producing the back vowel /o/ (9). In all other aspects, the derivation is the same as the one detailed out for *a: e* verbs above.



Note that the floating [U] element fails to link to the stem vowel in the 2_{PL} form (*shihni*), although [A] is delinked here by the magnetism effect of the [A]-attracting 2_{PL} suffix *-ni*. This is actually a desirable result from the point of view of phonological theory. Namely, the fact that apparent insertion of the [U] element in Albanian *o: e* verbs coincides and is conditioned by subtraction of the [I] element by the [I]-eating suffix in the 1_{SG}, 1_{PL}, and 3_{PL} forms, and not by subtraction of the [A] element, leaving behind the [I] element *in situ*, may be argued to fall out naturally from the general constraint on the co-occurrence of [I] and [U] elements, as argued for, e.g., by Scheer (1999). As [I] encodes frontness and [U] encodes backness (in velars and back vowels, etc.), they represent conflicting properties and

⁶ See also Backley and Nasukawa (2016) for a similar account of Japanese *h*. In a similar vein, Scheer (1999) has the elements [U] for backness and [B] for labiality, arguing for a strict distinction between the two.

should not combine in the same expression (cf. Backley 2012, 85-6).⁷

2.3.3 Je-Verbs

The final subclass of umlauting verbs in Albanian are the *mbjell*-type verbs. They have an alternation of their stem diphthong and /i/, accompanied by stem-final velar palatalisation, only in the 2_{PL} present tense form [tab. 10]. Note that in *ngre* ‘to lift’ vel sim., the diphthong is obscured by the preceding consonant cluster ending in a liquid (Orel 2000, 6).

Table 10 Present tense paradigm of je-verbs in Albanian

Person	SG	PL	SG	PL
1	<i>djeg</i>	<i>djeg-im</i>	<i>mbjell</i>	<i>mbjell-im</i>
2	<i>djeg</i>	<i>digj-ni</i>	<i>mbjell</i>	<i>mbill-ni</i>
3	<i>djeg</i>	<i>djeg-in</i>	<i>mbjell</i>	<i>mbjell-in</i>
1	<i>shpie</i>	<i>shpie-m</i>	<i>ngre</i>	<i>ngre-më</i>
2	<i>shpie</i>	<i>shpi-ni</i>	<i>ngre</i>	<i>ngri-ni</i>
3	<i>shpie</i>	<i>shpie-n</i>	<i>ngre</i>	<i>ngre-në</i>

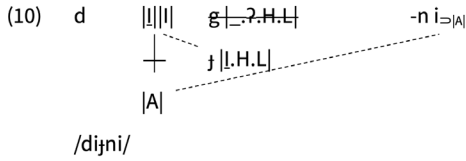
The distribution of *je* vs. *ie* is not entirely clear, either (Orel 2000, 4), but do note that the ‘epenthetic’ vowel, from the floating element in the 1_{PL} and 3_{PL} forms, seems to coincide with the reduced (light) diphthong *je* in consonantal stems, and they are in complementary distribution with the full (heavy) diphthong *ie* in vocalic stems, as in *shpie* ‘to lead’, which has to be an effect of the prosodic structure.

In any case, as the diphthongs may be represented as sequences of elements [I] = /i, j/ and [A.I] = /e/, the [I]-eating magnetic effects of the suffixes could easily be obscured on the surface level. As diphthongs are internally complex elements, it is usually only the rightmost part of the diphthong that is affected by the phonological processes in their environment. Therefore, the diphthong may be easily restored phonologically, even when one of the [I] elements is lost. Alternatively, the magnetic effects of the suffixes may be blocked by the headed element [I] itself, which, as a strong element, wins over the attracting force of the suffix.

In the 2_{PL} form, on the other hand, the suffix *-ni* successfully attracts the rightmost [A] element from the stem. Thus, the only material remaining is the surplus of [I] elements, which realises

⁷ In line with the notation in Scheer (1999), the front rounded vowel /y/ should then be represented as [I.B], thus modifying its initial representation given in (1).

the stem vowel as /i/ and palatalises the stem-final consonant by spreading an [I] element from a neighbouring segment (10).



The verbs *pyes* ‘to ask’ and *vdes* ‘to die’ follow a similar pattern as *je*-verbs [tab. 11]. The former has a labialised stem diphthong *ye*, in all aspects otherwise parallel to *ie/je*, with *t: s* alternation regularly induced by the floating [I] from the ‘[I] Eater’ suffix. The latter, however, has an underlying stem-final /s/, so there is no consonant mutation, but it has a covert diphthong, with the 2_{PL} form *vdis-ni* as the only ostensible trace of the stem-vowel alternation affecting its [A] element.

Table 11 Present tense paradigms of Albanian verbs *pyes* and *vdes*

Person	SG	PL	SG	PL
1	<i>pyes</i>	<i>pyes-im</i>	<i>vdes</i>	<i>vdes-im</i>
2	<i>pyet</i>	<i>pyes-ni / pyet-ni</i>	<i>vdes</i>	<i>vdis-ni</i>
3	<i>pyet</i>	<i>pyes-in</i>	<i>vdes</i>	<i>vdes-in</i>

2.3.4 Non-Umlauting Verbs

Taking the 3_{SG} form as the basic allomorph in Albanian verbal conjugation, under the magnetism account provided above, also explains the lack of alternation in a subset of verbs with stem vowels /a/ or /o/, such as *hap* ‘to open’, *ngroh* ‘to warm up’ etc. (Recall Table 4, reproduced in Table 12 below, for easier reference.)

Table 12 Present tense paradigms of non-umlauting verbs in Albanian

Person	SG	PL	SG	PL
1	<i>hap</i>	<i>hap-im</i>	<i>ngroh</i>	<i>ngroh-im</i>
2	<i>hap</i>	<i>hap-ni</i>	<i>ngroh</i>	<i>ngroh-ni</i>
3	<i>hap</i>	<i>hap-in</i>	<i>ngroh</i>	<i>ngroh-in</i>

Namely, if there is no [I] element underlyingly present in the stem vowel, the attraction property of the suffixes simply remains unsatisfied and no stem-vowel alternation occurs. Therefore, a

unified phonological account of all attested patterns, based on language-specific magnetic forces in the present tense suffixes and the general conditions of phonological well-formedness, has a clear advantage over postulating the existence of lexical diacritics and numerous morphological (sub)classes to explain the (lack of) stem-vowel metaphony in particular verbs in Albanian.

Interestingly, no |A|-eating in the 2_{PL} form takes place, either. I leave this issue open for now, although it may be the case that delinking the sole element from the stem vowel /a/ = |A|, as in *hap*, would result in an illicit representation (**hpni*). Also, as the sole element in a structure is always headed, i.e. the only element is automatically assigned the head status, it may also be protected from the magnetic forces of the suffix simply by virtue of being strong.

The verb *ngroh* vel sim. may be underlyingly akin to *hap* and *o*: *e* verbs such as *shoh*, in having the stem vowel /a/ = |A| with an additional floating |U| from *-h* < **sk*, thus backing the stem vowel to /o/, as discussed above (§2.3.2).

Conversely works the same, too. If the sole element is |I|, no attraction happens, as is the case with the small class of verbs of motion, such as *ik-i* ‘to go’ and *hip-i* ‘to go up’ [tab. 13]. However, the floating |I| surfaces in these verbs as the overt 1sc suffix and the epenthetic vowel in the plural, along with the nasal formant in 2/3sc, shared with Class I verbs.⁸

Table 13 Present tense paradigms of the verbs of motion in Albanian

Person	SG	PL	SG	PL
1	<i>ik-i</i>	<i>ik-im</i>	<i>hip-i</i>	<i>hip-im</i>
2	<i>ikën</i>	<i>ik-ni</i>	<i>hipën</i>	<i>hip-ni</i>
3	<i>ikën</i>	<i>ik-in</i>	<i>hipën</i>	<i>hip-in</i>

2.4 Summary and Discussion

Rather than splitting the Albanian verbal lexicon into umlauting and their mirror-like counterparts, non-umlauting verbs, the analysis couched in ET and Magnetic Grammar, as pursued here, allows us to consider verbal umlaut or metaphony in Albanian as a productive

⁸ Another such non-umlauting verb of motion is *ec-i* ‘to walk’, which curiously lacks metaphony despite having the stem vowel /e/. To accommodate for it, as well as all the other Class I (nasal stem) verbs, which never feature any metaphonic alternations, irrespective of what their stem vowel is, an alternative analysis could have the stem-final nasal somehow interacting with the magnetic properties of inflectional suffixes, instead of the stem vowels. In other words, the regular co-occurrence of the nasal formant with lack of metaphony is probably not accidental.

phonological process, affecting the underlying stem vowel /e/ = [A.I], in all verbs where the conditions for its application are met. Its metaphonic behaviour in the conjugation is simply a consequence of the magnetic forces of Albanian verbal suffixes, variously attracting the [I] and [A] elements from the stem vowel.

Morphology, in that sense, has no special role in producing the stem allomorphy, other than simply providing the contexts in which the phonological representations of the stem and of the inflectional suffixes with their magnetic properties, as reproduced here in (11), regularly interact with each other. In other words, with the phonological representation of the present tense inflectional suffixes as in (11), there is no need for resorting to any morphologically or lexically conditioned allomorphy in the Albanian verbal system.

- (11) a. 1SG.PRES $\Rightarrow$ |₃|
 b. 2/3SG.PRES $\Rightarrow$ $\emptyset$
 c. 1PL.PRES $\Rightarrow$ |₃| m
 d. 2PL.PRES $\Rightarrow$ n i₃ |₃|
 e. 3PL.PRES $\Rightarrow$ |₃| n

There are several independent pieces of evidence for the floating segments and the magnetic properties of the affixes in (11), as demonstrated in the analysis. First, their existence is pointed out by the palatalisations and *t*-assibilation accompanying metaphony in various persons of the present tense paradigm. Second, they are made overt by prosodic structure requiring the insertion of an epenthetic vowel, which surfaces as *i*, in certain structural configurations. Third, this structure surfaces overtly as the 1SG verbal suffix -i in some varieties and contexts. Last but not least, the *R*-blocking effects for stem-vowel metaphony in the verb *marr*: *merr* in the 2PL form (*merrni*) point out to and provide additional evidence for the [A]-eating behaviour of the 2PL suffix. However, as only the material that is linked to the phonological word may be pronounced, these floating segments, as well as the elements [I] and [A], attracted to these suffixes, remain uninterpreted for most of the time in the standard variety, which is what gives the Albanian verbal umlaut the impression of opaqueness and irregularity.

At the same time, the seemingly ‘morphomic’ pattern in the Albanian umlauting verbs paradigm finds a regular phonological solution. Although it may look like it at the first glance, there is in fact no ‘morpheme’ in the distribution of stem allomorphs in Albanian verbs, in the sense of a ‘purely morphological’ pattern that eludes phonological explanation. On the contrary, a strictly modular, Item-and-Arrangements-based phonological explanation for this particular ‘morphomic’-like distribution is proven to be possible using ET, within

a model of language structure based on attraction and repulsion between elements, as advocated for by Magnetic Grammar.

The analysis pursued here for Albanian, as a corollary, also corroborates several other independently noted phenomena in phonology. For instance, it was shown that strong elements, such as elements that are headed, are more resilient to phonological processes and may defy magnetic forces of other elements. Second, glides seem to pattern with vowels, as in the verb *merrni* (§2.3.1). The backing property of *h* (Backley, Nasukawa 2016), as well as the labio-velar hypothesis (Backley, Nasukawa 2009; Ulfsbjorninn 2021), are corroborated in Albanian by the lexical class of inchoatives in **sk* (§2.3.2). At the same time, this analysis supports a distinction between the element [B], for labiality, and [U], for backness (Scheer 1999). Finally, the specific interaction of element [I]'s magnetic force with nasals, which was merely hinted at for the traditional Class I verbs in Albanian, certainly merits further research.

3 Conclusion

In this paper, I have developed an analysis of Albanian verbal morphology, couched in ET (Backley 2011) and based on the central idea of Magnetic Grammar (van Oostendorp, D'Alessandro 2018; D'Alessandro, van Oostendorp 2020), that the structure is organised by language-specific forces of magnetic attraction and repulsion between elements. In particular, I have shown how the representations of verbal suffixes in Albanian, when equipped with the proper magnetic force towards the [I] resp. [A] elements, can easily account for the complex umlauting as well as non-umlauting patterns in the present tense.

The analysis pursued here provides a viable alternative to the traditional, morphological or lexical metaphony-based account, by postulating floating elements and magnetic effects in the inflectional suffixes. In addition to providing a more elegant, unified analysis for various conjugation classes in the language, the approach developed here also has the more general advantage of providing a purely phonological, i.e. strictly modular explanation for all the synchronically attested allomorphy patterns, without the need for resorting to any extra-phonological devices, as is the case in Albanian traditional grammar. In addition, it provides a ready-made solution for the seemingly 'morphomic' distribution of allomorphs in the Albanian present tense paradigm.

Several issues remain open for future research. First of all, I deliberately did not delve too much into the structural makeup of the [A]-eating 2_{PL} present tense suffix *-ni*, as this issue deserves special treatment. Namely, its different behaviour than that of all other verbal

suffixes, which are ‘[l] Eaters’, is unsurprising given its peculiar diachronic origin, as a clitic renewed as a suffix, after the original 2^{PL} suffix *-ī* was lost (cf. Joseph 2010 inter alia). It would be interesting to see whether some of this peculiar history is actually reflected in the synchronic representation and magnetic properties of *-ni*, as well.

Secondly, like Abruzzese, Albanian too features a relatively complex metaphonic alternation in nouns, in the nominal plural formation in particular (cf. Bozhoviq 2021). It may not be unreasonable to try and extend the magnetism-based account developed here to the nominal domain, as well, thus developing a general, unified theory of metaphony in Albanian.

Finally, most of the Albanian verbs that participate in the umlauting alternation in the present tense paradigm also feature further allomorphs, by a process traditionally termed ablaut or apophony, in the aorist stem (e.g. *dal*: *dola* etc.). As some of these patterns actually do trace their origin back to the Proto-Indo-European verbal ablaut—unlike metaphony, which is a younger, language-internal process—it would be quite striking if it turned out that the apophony in Albanian was also phonological, i.e. an active synchronic process. I leave this possibility open for now.

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