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THE ROLE OF PARADIGM IN TWO DIALECTAL VARIETIES OF THE ISLAND OF LESVOS*

Abstract

This paper discusses data from the nominal paradigms of two dialectal varieties of East Lesvos, those of Pamfila and Thermi. It is shown that there is abundant evidence for the key role of the paradigm in the phonological realization of the cluster [noun + clitic]. We argue that the grammar of these dialects must crucially include constraints that require identity between two surface forms of the paradigm, and we make specific proposals about the precise statement of such intra-paradigmatic identity. Identity constraints must have a limited domain of application, circumscribed by the forms of the paradigm and only those. More importantly, we present evidence that intra-paradigmatic identity constraints hold along the morphosyntactic dimensions of Person and Number which enter into the construction of the paradigms we study. The statement of intra-paradigmatic identity is expressed through constraints which require identity between two forms sharing a morphosyntactic feature (i.e., [+singular], [+third person] etc.) along any of the dimensions of the paradigm.

1. Introduction

The language spoken on Lesvos belongs to the group of northern Greek dialects and displays the following two major characteristics. First, the mid-vowels /o/ and /e/ become /u/ and /i/ respectively, when found in unstressed position. For example, standard Greek 'omorfo "nice" is pronounced as /'omurfu/, and 'efere "(he) brought" surfaces as /'efiri/. Second, unstressed /u/ and /i/ are generally deleted (cf. (1)), except in cases where they are used as evidence for contrasting morphological information (cf. (2)).

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(1)	0	Wian	dia	lects

Standard Greek

a. 'vno, 'vunarus

"mountain, big mountain"

b. pit'nos, pi'tinarus

"rooster, big rooster"

peti'nos, pe'tinaros

c. 'pinu, 'epna

"I drink, I was drinking"

'pino, 'epina

(2) Lesvian dialects

Standard Greek

a. 'kovu, *kov

"(I) cut"

'kovo

vu'no

VS.

^{*}We wish to thank the audience of the International Conference of Modern Greek Dialects and Linguistic Theory, particularly M. Margariti-Roga for their insightful remarks.

b. 'kovi -> 'kov "(he/she) cuts" 'kovi

Considerable linguistic differences from village to village induce linguists (e.g., Kretschmer 1905, among others) to talk of dialectal varieties rather than of a single Lesvian dialect. In this paper, we deal with the paradigm of [noun + clitic] combinations in two dialectal varieties of East Lesvos, those spoken in the villages of Pamfila (Dialect A) and Thermi (Dialect B). The [noun + clitic] paradigm shows some morpho-phonological differences with respect to the standard Greek correspondent, on the one hand, as well as from one variety to another, on the other.

2. The data

Let us consider the data in (3) where the basic noun form /filus/ "friend", which derives from the standard Greek form /filos/, is combined with the possessive postclitics. The "~" in the third singular of Dialect B indicates variation between the two forms given, within the same speaker..

(3) Dialect A	Dialect B		Word + clitic	
a. filusim ¹	filuzim	<	filus + m	"my friend"
b. filus	filus	<	filus + s	"your"
c. filusit	filuzit ~ filust	<	filus + t	"his"
d. filusmas	filuzmas	<	filus + mas	"our"
e. filusas	filusas	<	filus + sas	"your"
f. filustun	filuzdun	<	filus + dun	"their"

If we compare (3) with the data in (4) below we see that most of these postclitics are not similar to the standard Greek correspondent forms.

- (4) Noun + Possessive postclitics in standard Greek
 - a. filozmu
 - b. filosu
 - c. filostu
 - d. filozmas
 - e. filosas
 - f. filostus

At a first sight, most differences between Lesvian and standard Greek seem to follow from independent phonological properties. Thus, the final /u/ of mu, su, tu, is not present due to the dialectal law of high vowel deletion in unstressed position. The /s/ is deleted before another /s/. For example, /filus+s/ surfaces as [filus] in (3b) and /filus+sas/ as [filusas] in (3e). This is due to the well-known law of coronal deletion before /s/, as observed in the formation of the perfective stem of verbs, (5a,b), or deverbal nouns in -si, -si

¹Hereafter, examples will be given in an unstressed form.

simo (5c,d,e) (Malikouti 1970):

(5)a. plath-/plas-"to mold", plasi "creation, world", plasimo "creation"

b. den- / des- "to tie", desimo "tie"

c. skiz- / skis- "to tear apart", skisimo "tearing apart".

Finally, the word final /s/ of /filus/ becomes a voiced /z/ before the voiced /m/, in the first person of plural in standard Greek, (4d), and in Dialect B, (3d). Voicing is not applicable in Dialect A.

In this paper, we argue that the differences between the two dialectal varieties, as well as the deviations with respect to standard Greek, cannot be explained by phonological factors alone. Rather, these differences provide evidence for the key-role played by certain mechanisms available to the morphology-phonology interface, namely to the notion of the morphological paradigm itself, and the notion of intra-paradigmatic identity relations. In what follows, we will examine these differences and the mechanisms that are needed to account for them.

3. The -i- epenthesis

In (3), we have an -i- between the final consonant of the noun and the initial consonant of the clitic in the first (1Sg) and the third person (3Sg) of the singular in both dialects. In an attempt to interpret this -i-, we restrict our attention to 1Sg, that is to /filusim/ (Dialect A) or to /filuzim/ (Dialect B). We claim that -i- is inserted for syllabifying reasons: the final cluster /sm/ that is created by combining filus with the postclitic -m is not a possible word-final cluster. In Lesvian, final clusters of obstruent-sonorant consonants are possible if the sonorant is coronal:

(6)a. xurevn < xurevun < xorevun "they danse"

b. kukl < kuklu "doll-MASC-GEN"

Another plausible interpretation of the —i- in -im of 1Sg is that it results from a Turkish influence. In Turkish, a language that was in contact with Lesvian for more than four centuries, a similar form, i.e., /HighVowel+m/, applies to the first person possessive clitic when the preceding noun ends by a consonant. Compare (7) and (8) below. Vowel harmony, in Turkish, accounts for the assimilation of the suffixal /i/ to the features [round] and [back] of the stem vowel.

(8) Lesvian (7) Turkish < filus + im filusim a. arkadasIm < arakadas + Im my friend friend-NOM my friend gatasim < gatas + im b. evim < ev + immy house (of) my cat cat-GEN c. okulum < okul + um gatisim < gatis + m my school my cats cats-NOM

d. gozum < goz + um vs.

my eye filum < filu + m

(of) my friend friend-GEN

gatam < gata + m

my cat cat-ACC

Although the Turkish contribution to the development of an -im postclitic form should not be underestimated, there is additional independent evidence for the -i- insertion. As mentioned before, a plausible observation could be that -i- appears to break-up /sm/ final clusters, on the basis of the fact that /sm/ is a legitimate cluster in Lesvian elsewhere. See (9) below.

(9) Lesvian Greek
a. smirnos < simerinos
of today
b. asmenjus < asimenjos
silver-ADJ

In order to interpret (9) as opposed to (3a) and (8a,b,c), we suppose that, although being legitimate inside the words, /sm/ is not allowed word finally. Such a hypothesis is plausible if the notion of word is taken in the broad sense, referring not only to one-word units, but also to clusters of words and phrasal affixes, if clitics are considered to belong to a closed set of phrasal affixes, following Anderson (1992). The postulation of an -i-epenthesis, however, is sound if an epenthetic -i- is generally used by the language in contexts other than the /sm/ word-final cluster in [noun + clitic] combinations. In fact, an epenthetic -i- may also appear at the end of a word that does not result from a [noun + clitic] combination, (10a) or at the left-hand side of words, (10b,c,d), when various consonant-final pronouns and particles are combined with consonant-initial words. Consider the examples in (10) as an illustration to this remark.

O UIIU	der the endingres in (10) as	wii 1110011011 10 0110 1 1111111
(10)	Lesvian	Greek
a.	t kozim ta loja	tu kozmu ta loja
	the words of the world	of the world the words
b.	den-i-dlev	den dulevi
	(he/she) does not work	NOT works(he/she)
C.	tun-i-psaxn'2	ton psaxni
	(he/she) loks for him	HIM looks
d.	min-i-majirevs psarja?	Mipos majirevis psarja?
	(are you) cooking fish?	Can it be cook(you) fish-PL

This epenthetic -i- should not be confused with the /i/ that derives from the verbal augment e- in unstressed position, for the following reasons. First, it appears in both the

²Palatalization of the /n/ and final i-drop.

present, (10b,c,d) and the past tense forms, (11). On the contrary, an augment is expected only in the context of the past tense:

(11) Lesvian

Greek

a. den idulipsa³

de(n) dulepsa

(1) didn't work

NOT worked-PERF-1Sg

b. tun ilugarjaza

ton elogarjaza

(I) was counting on him

HIM counted-IMPERF-1Sg

Second, the past forms for verbs that have more than two syllables, e.g., dulevo "work" and logarjazo "count" do not take an augment in the past tense, e.g., dulivga and lugarjaza, when they are not preceded by a proclitic or a particle. The absence of augment is also attested in Greek. See Babiniotis (1972) and Ralli (1988) for an analysis of the augment as a stress carrier.

(12) Lesvian

Greek

a. dulivga

duleva

I was working

b. lugarjasa

logarjasa

I counted

To conclude, in Lesvos, we find an epenthetic –i- word finally, in the [noun+clitic] context, and also in [particle, proclitic + verb] context. In all cases given in (11), this epenthetic –i- is inserted to break-up consonant clusters that would be unsyllabifiable if no epenthesis were to take place. Before examining the other occurrences of –i- epenthesis, that is the forms in (3c) in both dialects, let us go to the voicing assimilation in Dialect B, that is to the form /filuzim/ of Thermi.

4. The /s/ voicing assimilation

Thermi has a dialect where /s/ is the target of voicing assimilation that applies at the boundary between the noun and the postclitic, as shown by the first plural form (1Pl) /filuzmas/, and further illustrated by the examples in (13) below.

(13)a. ksixazmenus

< ksixas+menos

< ksexas+menos

forgotten-PART b. jitunazmas

< jitunas+mas

forget - PART

our neighbour

< jitonas+mas neighbour - OUR

VS.

³In standard Greek, as well as in Lesvian, the augment e- is inserted only in a stressed position. Considering the fact that stress can fall only on one of the last three syllables, a three-syllable verb needs not an augment to bear its stress. Therefore, the augment is only realized in the past tense of verbs of less than three-syllable length.

c. asmenjus < asimenjus < asimenjos *azmenjus silver-ADJ-MASC d. enas milus < enas milus *enaz milus a mill

Interestingly, 1Sg, (3a), 3Sg (3c), and the third person plural (3Pl, 3f) forms also show a voiced /z/. Both the 3Pl /filuzdun/ and the 1Sg /filuzim/ could be derived in a rule-based theory: voicing of /s/ to /z/ occurs in the 3Pl (before /d/) as well as in the 1Sg (before /m/), if we posit that a rule of voicing assimilation applies before the -i- epenthesis.

A rule-ordering analysis in precisely these terms is proposed by Newton (1972) to account for the fact that both forms [filuzim] and [filusim] are attested in Lesvos (/th/, /dh/ are the voiceless, voiced interdental fricatives).⁴

(14) Rule-ordering account of [thkozim] ~ [thkosim] "my own" (cf. Newton 1972: 208)

dhikosmu

High Vowel Loss dhkosm Voice Assimilation thkozm

Epenthesis thkozim -> [thkozim]

dhikosmu

High Vowel Loss dhkosm Epenthesis dhkosim

Voice Assimilation thkosim -> [thkosim]

However, this solution fails when one looks at the form /filuzit/ (3Sg) with a voiced /z/ in Dialect B. This voiced /z/ cannot be explained by any rule ordering. In this person, the final /s/ of the word /filus/ is not in the environment of voicing assimilation. This shows that other forces are at work here. Notice that in the 1Pl /filuzmas/ the final /s/ of the noun /filus/ is voiced, due to voicing assimilation as described earlier. We would like to propose that voicing in the 3Sg /filuzit/ is present because of a requirement that all occurrences of the noun within the [noun + clitic] paradigm must be identical. In other words, voicing assimilation that is responsible for the voiced /z/ in /filuzmas/, induces voicing of /s/ in /filuz-i-t/, even though voicing assimilation is not applicable here.

There are two apparent counterexamples that seem at first to cast doubt on this proposal. First, there is voiceless /s/ in the 2Sg and 2Pl, /filus/ and /filusas/. This /s/, however, is not the final consonant of the noun /filus/, but rather the first consonant of the corresponding postclitics, i.e., /s/ </su/ and /sas/. The second apparent complication is that, in fact, the 3Sg shows variation, /filuzit/ ~ /filust/, where the second variant has a voiceless /s/. Crucially, we only see this for the 3Sg. The 1Sg is always /filuzim/, never /filusim/.

⁴The problems that are encountered in an attempt to explain the voicing and the vowel epenthesis in the 1Sg of [noun-clitic] forms, of the northern Greek dialects of Zagori, Velvendos and Thasos, by using a rule-ordering hypothesis, are also discussed in a paper by Malikouti-Drachman and Drachman (1977: 47-49).

This fact implies that the identity requirement introduced in the preceding paragraph fails to show its effects within particular persons. As will be seen, this calls for certain refinements in the grammatical statement of the intra-paradigmatic identity.

5. Theoretical Assumptions

The theoretical model of grammar we assume in this paper is that of Optimality Theory of Prince & Smolensky (1993). In Optimality Theory (henceforth, OT), Universal Grammar consists of a set of well-formedness conditions or constraints. The output of phonology is not constructed by a step-by-step application of rules. Instead, given an input form, the grammar first generates a set of candidate outputs. Each of the candidates in this set is then evaluated by the constraints. The output of the grammar is the candidate that best satisfies the constraints, called the optimal candidate. The set of constraints (CON), the function that generates all candidates (GEN) and the evaluation procedure (EVAL) are all assumed to be fixed parts of the architecture of Universal Grammar, Grammars of particular languages are constructed by ranking the universal-constraint set. We illustrate the model with explicit examples below. Within OT, we especially rely on the notion of correspondence relation as developed in the work by McCarthy & Prince (1995). In its most general sense, a correspondence relation is a relation between two linguistic forms that impose identity constraints among elements of these forms. For instance, a lexical input and its output form(s) enter into a correspondence relation. A correspondence relation comes with a set of constraints, known as correspondence constraints, which require similarity between the two forms across different dimensions which are considered to be linguistically significant.

We illustrate these remarks with three basic correspondence constraints, shown below. MAX-IO requires that all segments in the lexical input be present in the Output, and DEP-IO requires that the Output does not include segments which are not present in the Input. The constraint IDENT-IO(F) is concerned with identity in terms of featural properties of two correspondent segments.

- (15)a. MAX-IO: Every segment of the Input has a correspondent in the Output. (Bans deletion).
 - b. DEP-IO: Every segment of the Output has a correspondent in the Input. (Bans epenthesis).
 - c. IDENT-IO (F): An Input segment and its correspondent in the Output must have identical values for feature F. (Bans featural changes)

Intuitively, correspondence constraints penalize disparity between inputs and outputs. MAX-IO does this by banning segment deletion and DEP-IO by banning segment epenthesis. IDENT-IO (F) penalizes disparity by banning featural mismatches between input and output correspondents. Epenthesis, deletion, and featural change are all different ways of breaching the identity between an input and an output form. In principle, there is a correspondence constraint requiring identity between input and output for each linguistically-significant dimension of phonological form (e.g., not only segments and features per se but also prosodic properties such as location of stress or suprasegmental

properties such as tone).

6. Basic constraint interactions

In what follows, we see how these constraints interact to determine the [noun + clitic] combinations in our data. Consider, first, the 1Pl [filuzmas] of Dialect B. The input to the formation of the 1Pl consists of the combination of the noun /filus/ and the clitic /mas/. There is therefore a violation of IDENT-IO (Voice), because /s/ surfaces as /z/. This fact is related to a property of consonant clusters in word-phrasal affix combinations. Any consonant cluster at the juncture between a word and a phrasal affix must be homogenous with respect to voice. Let us call this property VOICE-AGREE.

(16) VOICE-AGREE [abbreviated VA]

In a CC cluster at the word-phrasal affix juncture the Cs agree in voice

For an input /filus + mas/, then, we have two competing constraints. VOICE-AGREE requires that the output be [filuzmas] but IDENT-IO (Voice) requires that the output be [filusmas]. Such situations of constraint conflict are prototypical in OT. They are represented graphically by the tableau, shown below. The input is shown to the upper left corner. The constraints are shown at the top row. The two competing outputs, the candidates, occupy the second and third rows. The actual output is indicated by the arrow. Constraint violations are shown by '*' in the column of the constraint which is violated.

(17) Input: /filus + mas/ VOICE-AGREE IDENT-IO (Voice)
a. -> filuzmas *

a. -> filuzmas b. filusmas

Constraint conflict is resolved by imposing a prioritization of the relevant constraints. The fact that the Dialect B opts for the form [filuzmas] is expressed in OT by saying that the constraint VOICE-AGREE is ranked higher than the constraint IDENT-IO (Voice).

(18) VOICE-AGREE >> IDENT-IO (Voice).

Notice that if the ranking were IDENT-IO (Voice) >> VOICE-AGREE, instead, then [filusmas] would be the predicted output, as in Dialect A.

The same analysis applies to the form [filuzdun] (3Pl) from /filus+dun/. We know that the input form of the clitic is /-dun/ because the form surfaces as such after vowel-final bases.

(19) manadun < mana dun "their mother" mother-THEIR

The ranking VOICE-AGREE >> IDENT-IO (Voice) dictates voicing of the final /s/ of the input /filus/ before the voiced obstruent /d/ of the postclitic -dun. As opposed to Dialect B, we note that, in Dialect A, /filus/ before the 3Pl clitic -dun resolves the inhomogeneous voicing of the /sd/ by devoicing the clitic /d/ rather than voicing the final /s/ (e.g., /filustun/). Just as in dialect B, the form of the 3Pl clitic is /dun/ after vowel-final noun

forms (e.g., /manadun/ "their mother"). One way to account for this effect is to propose that there exist different IDENT-IO (Voice) constraints for nouns and for clitics. So, in Dialect A, IDENT-NOUN-IO is ranked higher than VOICE-AGREE which is in turn ranked higher than IDENT-CIITIC-IO. This ranking bans any changes in the feature of Voicing in the noun of Dialect A, and hence derives the absence of /s/-voicing throughout the paradigm. At the same time, this ranking permits the voicing alternation seen in the clitic. (20) IDENT-NOUN-IO >> VOICE-AGREE >> IDENT-CLITIC-IO⁵

Consider now the ISg. The input is /filus + m/ and the output is [filusim] in Dialect A and [filuzim] in Dialect B. The relevant constraint prohibiting word final /sm/ clusters is *FINAL-CC, stated as in (21) below.

(21) *FINAL-CC: Final CC clusters, where the second C is a non-coronal sonorant are not allowed.

Once again we have an instance of constraint conflict. In the following tableau, candidate (a), the actual output, employs epenthesis, hence the violation of DEP-IO. Candidate (b) contains an illicit word-final cluster, and therefore violates *FINAL-CC. In the grammar of these dialects then it must be that *FINAL-CC is ranked higher than DEP-IO.

(22) Epenthesis in 1SG: Input /filus + m/; Output /filuzim/
New ranking relation: *FINAL-CC >> DEP-IO
Input /filus + m/ *FINAL-CC >> DEP-IO
a. -> filusim
b. filusm *

Intuitively, the tableau above shows that illicit word-final clusters are 'repaired' by epenthesis. But there are other ways that languages employ to resolve illicit clusters. Another way to resolve an illicit word-final cluster is by deletion of one of the consonants. This is shown in (23). The actual output, candidate (a), is compared to candidates (b,c), in which one of the consonants of the illicit cluster has been deleted. Deletion causes a violation of MAX-IO. Since (a) is the actual output, we may infer that MAX-IO is ranked higher than DEP-IO.

⁵We have been assuming that VOICE-AGREE is the constraint that induces voicing in both /filuzmas/ and /filuzdun/. However, the two consonant clusters differ in that one is an obstruent-sonorant and the other is an obstruent-obstruent sequence, and may be subject to different voicing requirements. Though we are aware that it may not be accurate to adopt the same constraint in these two different environments, we do assume this analysis for present purposes because it does not compromise the validity of the ensuing results.

(23) No deletion in 1Sg: Input /filus + m/; Output /filuzim/
New ranking relation: MAX-IO >> DEP-IO
Input /filus + m/ MAX-IO >> DEP-IO⁶
a. -> filuzim/filusim
b. filum
c. filus
*

Consider now the second-person forms, the 2Sg /filus/ from /filus + s/, and the 2Pl form /filusas/ from /filus + sas/ in both Dialects. As said before, in these forms, the final /s/ of input /filus/ deletes due to the law of coronal deletion before /s/. This implies that the constraint enforcing this deletion, call it *COR-COR, is higher ranked than the constraint that penalizes segmental deletion. We emphasize that the constraint *COR-COR is just a cover name for the more basic constraints that would derive coronal deletion in more detailed analysis of this phenomenon (these constraints would include at least the Obligatory Contour Principle and the requirement for overt expression of affix material). Since we focus on the role of the paradigm, we will put aside the details of that analysis.

In (24), we show how the basic faithfulness constraints MAX-IO, DEP-IO, and IDENT-IO (F) interact with each other and with other independent properties of the phonology of Dialect B to derive aspects of the 1Sg, 2Sg, 1Pl, 2Pl, 3Pl forms of the [noun + clitic] combinations.

(24) Summary of inferred rankings and their effects to Dialect B

VOICE-AGREE >> IDENT-IO (Voice)	Voicing of /s/ in [filuzmas], [filuzdun]
*FINAL-CC >> DEP-IO	Epenthesis of /i/ in [filuzim]
MAX-IO >> DEP-IO	Illicit consonant clusters *[filuzm] are resolved by epenthesis and not by deletion
*COR-COR >> MAX-IO	Deletion of final /s/ before /s/-initial

clitics

7. Paradigm uniformity

We turn now to the presence of voicing in the final consonant of the noun in the [noun+clitic] combination of the 1Sg, [filuzim] (Dialect B). As discussed in section 6, the presence of voicing is due to a constraint that demands identity of the noun-form across its

 $^{^6}$ It is possible that the candidates /filum/ and /filus/ are blocked by avoidance to homophony with the forms /filum/ from /filu-ACC -mu / "friend-Accusative + my" and /filus/ from /filu-GEN -su/ "friend-Genitive + yours"

various contexts of occurrence. Constraints can also apply between two different surface forms of a morpheme, and are then called Output-Output (OO) faithfulness constraints. In past literature, such constraints are usually studied under the name of analogy (Anttila 1977). The study of the effects of such constraints and the concept of paradigm uniformity is introduced into generative grammar by Kiparsky (1978, 1995). In more recent work, the study of paradigm uniformity has resurfaced within an Optimality Theory framework (cf. Burzio 1994, Benua 1995, Kenstowicz 1996, Steriade 1995).

(25) IDENT-NOUN-OO(F) (preliminary formulation to be refined later)

A noun has the same realization for feature F in its various contexts of occurrence.

The term "various contexts of occurrence" refers to all the surface realizations of the noun in the [noun + clitic] context. More accurately, the set of [noun + clitic] forms comprises a paradigm defined on the morphosyntactic dimensions of Person (1, 2, 3) and Number (Singular, Plural). For some of the [noun + clitic] forms, combining the base noun /filus/ with a clitic of some Person and Number results in phonological action. For instance, as we have seen in the 1Pl /filus+mas/, voicing assimilation of /s/ before /m/ gives /filuzmas/. The effect of the constraint IDENT-NOUN-OO(F) in the grammar is to induce similar changes on the noun in contexts where the trigger of the phonological action is not present. We illustrate this 'leveling' effect of IDENT-NOUN-OO(F) constraints with the 1Sg in (26). The actual output (a) incurs a violation of IDENT-NOUN-IO (Voice). Candidate (b) instead violates IDENT-NOUN-OO, since in the plural the noun appears with /z/, /filuzmas/. We infer that IDENT-NOUN-OO (Voice) >> IDENT-NOUN-IO (Voice).

(26) Leveling in the ISg: Input /filus + m/; Output [filuzim]

Ranking argument: IDENT-NOUN-OO >> IDENT-NOUN-IO Input /filus + m/ IDENT-NOUN-OO IDENT-NOUN-IO

a. -> filuzim

b. filusim

This tableau shows that the leveling effect of IDENT-NOUN-OO is not automatic, but it is present only under the assumption of the particular ranking inferred above. This point becomes important when we deal with variation seen in the 3Sg /filuzit/ ~ /filust/. The first variant is analogous to /filuzim/, but the second variant indicates that the leveling forces can be suppressed. We will see that this variation can be expressed by the variable ranking of the two relevant constraints IDENT-NOUN-OO and IDENT-NOUN-IO within the same grammar.

Before proceeding we take note that a basic grammatical requirement for the application of IDENT-OO is the notion of "domain of application" of an OO constraint. It is important to stress that the forms over which identity applies must be limited to the occurrences of the noun with the clitic set of forms. In particular, IDENT-OO cannot impose identity between the independently occurring noun /filus/ outside of the [noun + clitic] paradigm and its form /filus/ within the paradigm. If it did, all instances of the noun would level to /filuz/ or /filus/, and this is not what we find. Thus, it follows that any

IDENT-OO constraint must be specified to apply only within the set of forms of a specific paradigm, in our case, in the paradigm involving a noun and a phrasal affix.

We turn now to the 3Sg of Dialect B. The input to the formation of the 3Sg is /filus+t/. The output shows variation between /filuzit/ and /filust/ within the same speaker. We put aside for a moment the issue of variation, focusing on /filuzit/. We address the issue of variation in the next section.

At first, the presence of epenthesis in /filuzit/ may be surprising. In the 1Sg /filuzim/, the presence of epenthesis is a repair for the non-permissible final /sm/ cluster. The same motivation for the presence of /i/ is not available for the 3Sg, since final /st/ clusters are attested in this dialect, see (27).

- (27)a. pist "faith" b. xtist "builder"
 - c. Anest "proper name"

Recall, however, that the grammar includes a constraint, IDENT-NOUN-OO, requiring that the final /s/ in the combination /filus+t/ be voiced. This constraint effectively favors output */filuz+t/. However, this output violates the constraint VOICE-AGREE. Voicing the first consonant of the clitic to give /filuzd/ incurs a violation of IDENT-CLITIC-IO, the constraint that disallows featural disparities for the clitic between its input and its output (we know that the input form of the 3Sg clitic is /t/, e.g., /manat/ < mana tu "his mother"). (28) IDENT-CLITIC-IO (F): An Input segment of a clitic and its correspondent in the

Output must have identical values for feature F. (Bans featural changes)

Note that deleting one of the consonants in /z+t/ is not an option because of the violation of MAX-IO that this would incur. As we have inferred earlier, MAX-IO >> DEP-IO. Hence, epenthesis is the only option for resolving the offending /z+t/ cluster.

(29) 3Sg epenthesis

Input	/filus+t/	IDENT-CIITIC-IO, V	OICE-AGREE	>>	DEP-IO
a>	filuzit				*
b.	filuzt		*!		
C.	filuzd	*!			
d.	filuzid	*!			*

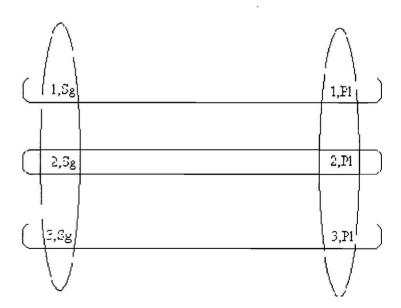
8. Dissecting the paradigm

The 3Sg shows variation, i.e., /filuzit/ and /filust/, where the second variant has a voiceless /s/. This indicates that the OO-identity forces, so far expressed by the constraint IDENT-NOUN-OO in our grammar, can be violated. Crucially, however, suppression of OO-identity effects is seen only in the 3Sg. The 1Sg is always /filuzim/, never */filusim/. The latter form avoids an illicit final /sm/ cluster by epenthesis, as expected, but it does not voice the noun-final /s/, remaining faithful to the input noun /filus/. In terms of our constraints, the non-attested */filusim/ in Dialect B would be the output produced by a grammar where IDENT-NOUN-IO >> IDENT-NOUN-OO. In this ranking, the leveling

forces of OO-identity would be suppressed by IO identity. Since 1Sg, */filusim/ cannot be an output for the 1Sg, we must conclude that the OO-identity constraint cannot be violated. Hence, presence of variation in the 3Sg suggests that IDENT-NOUN-OO can be violated, but absence of variation in the 1Sg suggests that IDENT-NOUN-OO cannot be violated.

We have arrived at a contradiction. If the identity requirement between the 1Sg and 1PI (voicing) and the identity requirement between the 1Sg and 3Sg (voicing) are enforced by the same constraint in the grammar, a single IDENT-NOUN-OO, we do not predict the state of affairs that is true in Dialect B. Rather, a single IDENT-NOUN-OO predicts no variation in 1Sg and 3Sg (/filuzim/, /filuzit/) or variation in both 1Sg and 3Sg (/filusim ~ filuzim/, /filusit ~ filuzit/). This contradiction is resolved by positing distinct identity relations and thus distinct identity requirements holding within the paradigm. One identity constraint holds between the 1Sg and the 1Pl. These two forms share the morphosyntactic feature [+first person], along the Person dimension. We call this type of identity constraint "Person identity". Person identity is to be contrasted with the identity requirement between the 1Sg and the 3Sg. These two forms share the morphosyntactic feature of [+singular], along the Number dimension, and thus we call their identity constraint "Number identity". Schematically, these two identity relations are depicted in (30) below. The horizontal boxes indicate that a Person identity constraint holds between the two enclosed forms, and the vertical elipses indicate that a Number identity constraint holds between the enclosed forms.

(30) Distinct identity relations between 1Sg, 1Pl and 1Sg, 3Sg



Since distinct identity requirements are involved, they project distinct constraints in the grammar. Since the constraints are distinct, they may have different 'strengths' or they may reside at different places in the constraint ranking.

Let us show now how Person identity and Number identity constraints interact in the grammar of Dialect B. We call the OO-identity constraint that holds between the 1Sg and the 1Pl, IDENT-NOUN-OO[+first person], and that holding between the 1Sg and 3Sg, IDENT-NOUN-OO[+singular]. Following our proposal above, IDENT constraints are projected (a) along the dimensions of the paradigm or along what we called earlier the morphosyntactic dimensions of the paradigm, and (b) IDENT constraints demand identity between forms that share some morphosyntactic feature along one of the dimensions. The input to the 1Sg is /filus+mu/. The actual output is /filuzim/. IDENT-NOUN-IO is violated because the input has /s/, but the output has /z/. The reason why IDENT-NOUN-IO is violated as we go from input /filus+mu/ to output /filuzim/ is of course because of the IDENT-NOUN-OO constraint that holds between the 1Sg and the 1Pl. Hence, we infer that IDENT-NOUN-OO(1Sg,1Pl) >> IDENT-NOUN-IO, as shown earlier. Intuitively, the paradigmatic leveling force 1Sg and the 1Pl is stronger that the IO-faithfulness identity requirement between the input noun /filus/ and its output 1Sg form.

(31) 1Sg, /filuzim/, 1Pl /filuzmas/

IDENT-NOUN-OO-[+first person] >> IDENT-NOUN-IO

Consider now the other identity relation between 1Sg and 3Sg. The input to the 3Sg is /filus+tu/. When the output is /filust/, the IO-identity to /filus/ wins over the OO-identity constraint. Hence, output /filust/ implies that IDENT-NOUN-IO >> IDENT-NOUN-OO-[+singular]. In addition, IDENT-NOUN-IO >> IDENT-NOUN-OO-[+third person], where the last constraint demands a voiced /z/ in the 3Sg because there is a /z/ in the 3Pl. This ranking is shown in the next tableau. We only show the relevant portions of the output candidates, i.e., anything after the final coronal fricative of the noun is omitted.

(32) Suppression of paradigmatic leveling effects on the 3Sg

(33) Grammar for 1Sg /filuzim/, 3Sg /filust/

IDENT-NOUN-OO-[+first person] >> IDENT-NOUN-IO >> IDENT-NOUN-OO-[+sg], IDENT-NOUN-OO-[+third person]

When the 3Sg is /filuzit/, one or both of the lowest-ranked constraints above are promoted higher than the IDENT-NOUN-IO constraint. That is, the Person identity between the 3Sg and 3Pl or the Number identity between the 3Sg and the 1Sg, or both, become 'strong', just like the Person identity constraint between the 1Sg and the 1Pl.

(34) Grammar for 1Sg /filuzim/ (as before), but 3Sg /filuzit/
IDENT-NOUN-OO-[+first person] >> IDENT-NOUN-IO, and
IDENT-NOUN-OO-[+sg] >> IDENT-NOUN-IO
or

IDENT-NOUN-OO-[+third person] >> IDENT-NOUN-IO

To sum up, dialect B shows variation in the presence of voicing in the 3Sg /filuzit ~ filust/, and absence of variation in the 1Sg /filuzim, *filusim/. We have shown that a single OO-identity constraint cannot account for this state of affairs, as it predicts uniform presence or absence of variation across all forms in the paradigm. This argues that within a paradigm, OO-identity constraints request identity between forms of a specific person (e.g., first or third) or a specific number (e.g., singular or plural), only. Specifically, we saw that Person identity between the 1Sg and the 1Pl is never violated as shown by the pair /filuzim/filuzmas/ (no variation), but Number identity between the 3Sg and the 1Pl and Person identity between the 3Sg and the 3Pl can be violated (as shown by the pairs /filust/filuzim/ and /filust/filuzdun/).

Finally, notice that Dialect A's 3Sg /filusit/ is problematic. There is no phonotactic reason to motivate the presence of /i/ epenthesis in these forms. Final /st/ clusters seem to be attested in Dialect A (see (35)):

(35)a. pist "belief"

b. asmenius "silver-ADJ"

One possible account of the presence of /i/ in the 3Sg of Dialect A is to argue that the clitics of Dialect A in 1Sg and 3Sg have a lexicalized /i/, hence /im/ and /it/. We leave this issue for future research.

10. Conclusions

In this paper, we have studied the role of the morphological notion of paradigms in shaping the phonological properties of the word-forms within two dialectal varieties of the island of Lesvos. We chose to analyze different dialectal varieties of Lesvos in the hope that this will allow us to isolate the distinct contributions of phonology and morphology in shaping each individual dialect. We have seen that to account for certain aspects of the phonological form of words within the paradigm, the grammar must crucially include constraints that require identity between two surface forms (of the paradigm). We have formalized such constraints in terms of Output-Output correspondence relations, building in this way on other studies of intra-paradigmatic relations in the literature. The interaction of such constraints with other independently necessary properties of the phonology and morphology of these dialectal varieties of Lesvos derives aspects of [noun + clitic] combinations which would otherwise seem puzzling.

We made two specific proposals about the precise statement of intra-paradigmatic identity in the grammar. Identity constraints must have a limited domain of application, circumscribed by the forms of the paradigm and only those. Perhaps, more importantly, we presented evidence that intra-paradigmatic identity constraints hold along the morphosyntactic dimensions of Person and Number which enter into the construction of the

paradigm. The statement of intra-paradigmatic identity is expressed through constraints which require identity between two forms sharing a morphosyntactic feature (e.g, [+singular], [+third person]) along any of the dimensions of the paradigm.

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