Representing unstable segments: External sandhi rules in Tuscan varieties

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Abstract

This paper is concerned with external sandhi phenomena in Tuscan varieties. Processes of word-final and word-initial vowel deletion, which are related to cases of *Raddoppiamento Sintattico*, will be taken into account. These phenomena belong to the type of phonological rules that involve unstable segments, which appear or disappear depending on contextual conditions. A representational analysis is here presented, which does not involve rules that add or remove segments in the course of phonological derivation. In this proposal, which incorporates the representational tools of Strict CV Theory, the 'deletion' and 'insertion' of segments are reinterpreted as variable contextual conditions that apply to one and the same lexical form that contains unstable segments, determining the phonetic realisation or non-realisation of such segments. The proposed approach allows a homogeneous explanation of the phenomena of vowel deletion here analysed, while avoiding disadvantages of derivational analyses, such as the need for diacritics and extrinsic rule ordering.

Keywords: V-deletion, unstable segments, Tuscan dialects, Strict CV Theory.

1. *Introduction*

This article is dedicated to external sandhi phenomena of Tuscan varieties. More precisely, it deals with processes of word-final and word-initial vowel deletion, which are related to cases of initial consonant gemination, falling within the more general phenomenon of *Raddoppiamento Sintattico* (henceforth RS). Such phenomena have been treated in the dialectological and phonological literature (Giannelli, 1976; Agostiniani, 1989; 1992; Marotta, 1995; Binazzi, 2019; Savoia, 2023). Two articles in particular deal in depth with vowel processes: Agostiniani (1989) focuses on vowel deletion in

Received: September 2024
Accepted: December 2024

SSL LXII (2) 2024, pp. 57-88
doi: 10.4454/ssl.v62i2.410

general, while Marotta (1995) specifically examines apocope, i.e. the deletion of postvocalic vowels in word-final position. The processes discussed in this article belong to the type of phonological rules that involve unstable segments, which appear or disappear depending on contextual conditions. A well-known example of this type of rule is that of syncope and epenthesis phenomena in which vowel-zero alternations are observed in word-internal positions. In traditional description, an epenthetic vowel is inserted in some cases to interrupt an illicit consonant sequence, such as in the Emilian dialect of Finale Emilia ['umda]/['umɐd] "humid (F.S./M.S.)". Gemination due to RS can also be described as the insertion of a consonantal position at the beginning of a word, determined by specific properties of the preceding word.

For the Tuscan phenomena investigated, this paper proposes a representational approach, which does not involve rules that add or remove segments in the course of phonological derivation. In this view, the 'deletion' and 'insertion' of segments are reinterpreted as variable contextual conditions which apply to one and the same lexical form that contains unstable segments, determining the phonetic realisation or non-realisation of such segments.

The aim is to demonstrate how a representational approach allows us to reveal connections existing between different phenomena and to enable the analysis of aspects that raise problems from a theoretical point of view.

2. *The data*

The paper deals with processes of vowel deletion (V-deletion), which will also be analysed in relation to RS caused by forms of the definite article (see among others Giannelli, 1976; Agostiniani, 1992; Savoia, 2023)[1].

[1] For a hypothesis on the diachronic origin of the RS in the definite article of Lucca variety, see Saiu (2004).

Two different varieties of Tuscan will be dealt with, the one spoken in Florence and the one spoken in Castelnuovo di Garfagnana; the latter, as far as the investigated phenomena are concerned, can be considered representative of the Tuscan of Lucca. The analysis is based on data partly drawn from the literature and partly collected by the author and analysed perceptually. It should be noted that the analysis proposed here does not take sociolinguistic variation into account. As far as the diatopic dimension is concerned, at least with respect to the phenomena investigated, the two varieties present clearly different characters, which are straightforwardly traceable to different grammars. From the diaphasic point of view, apocope, which is well established in the Florentine and central Tuscan area but can also be observed in the rest of Tuscany (Agostiniani, 1989; Marotta, 1995; Savoia, 2023) is typical of dialectal speech or of Italian with a strong dialectal colouring, while it tends to be avoided in the register closer to standard Italian[2]. However, the linguistic productions examined in this paper belong to dialect or dialectal Italian, in which V-deletion and RS phenomena are present without significant exceptions, so that even the possible variability due to diaphasic factors is excluded in the data analysed in this paper.

2.1. *Vowel deletion*

The V-deletion processes in external sandhi that can be observed in Tuscan varieties can on the whole be described as phenomena that meet the requirement of hiatus avoidance; however, they are ruled by different conditions and must be analysed as different processes.

2.1.1. *Elision*

The most general phenomenon, the one observable in all areas of the region and also generally accepted in speech that is not markedly dialectal, is elision, whereby in a two-word sequence Word1-Word2 the final vowel of Word1 (V_1) is deleted if it is immediately followed by the initial vowel (V_2) of Word2[3]. The data in (1) come from

[2] On the dynamics of sociolinguistic variation in Tuscany, see Binazzi (2019).

[3] Unless otherwise stated, the data in the examples are those collected by the author. Examples taken from other authors are usually reported in IPA.

Florentine informants (here, and in the rest of the paper, the corresponding form in Standard Italian is also given for the sake of comparison):

(1) *il lavoro è finito*
[i lla'vo:r ɛ ffi'ni:θo]
"the job is done"
vendeva ortaggi
[ven'de:v or'taddʒi]
"(he/she) sold vegetables"
frutta e verdura
['frutt e vver'du:ra]
"fruit and vegetables"
posti assurdi
['post as'surdi]
"very strange places"
persone antipatiche
[per'so:n anti'paθihe]
"unfriendly people"
sapore amaro
[sa'ɸo:r a'ma:ro]
"bitter taste"

The examples in (1) illustrate elision in its most general application, where both V_1 and V_2 are unstressed. Under specific circumstances, however, elision is also extended to contexts in which, while V_1 is unstressed without exception, V_2 carries the word stress. This extended application seems to depend either on rhythmic requirements of Word2 or on the presence of a restricted set of lexical items in the position of Word1 (Agostiniani, 1989). The examples in (2) illustrate the rhythmic conditioning; (2) also contains a representation of the rhythmic structure of the string, by means of a grid in which the first level corresponds to syllable nuclei, the second to lexical stress and the third to phrasal prominence. As can be seen in (2a), when V_2 carries the strongest stress in the phrasal domain, elision is blocked. In contrast, in the sequences in (2c) and (2d), the phrase prominence is on the third word, and the word stress on V_2 does not block elision.

Note in (2b) that elision is blocked even in the case where Word1 has antepenultimate stress: this rules out the hypothesis that the blocking could be an effect of stress clash avoidance. If elision applied also in (2b), the two stressed vowels would not be adjacent and therefore no stress clash would result from V-deletion; nevertheless, elision does apply in this case either. Examples in (2a) and (2c) are taken from Agostiniani (1989); examples in (2b) and (2d) come from Florentine informants:

(2)

a. *il babbo esce*
*[i b'babb 'ɛʃʃe]
"dad goes out"
mangiava erba
*[man'ʤaːv 'ɛrba]
"(he/she/it) ate grass"
lo porto anche
*[lo 'pɔrt 'aŋke]
"(I) also bring it"

			*	
	*		*	
*	*	*	*	*
V	V	V_1	V_2	V

b. *il papero esce*
*[i p'paper 'ɛʃʃe]
"the goose goes out"

				*	
	*			*	
*	*	*	*	*	*
V	V	V	V_1	V_2	V

c. *il babbo esce subito*
[il b'babb ɛʃʃe 'subiθo]
"dad goes out soon"
mangiava erba secca
[man'ʤaːv ɛrba 'sekka]
"(he/she) ate dry grass"
lo pɔrto anche subito
[lo 'ɸɔrt aŋke 'subiθo]
"(I) also bring it soon"

					*		
	*		*		*		
*	*	*	*	*	*	*	*
V	V	V_1	V_2	V	V	V	V

d. *il papero esce dal recinto*
[i p'paper ɛʃʃe dai rre'ʃinto]
"the goose goes out of the fence"

								*	
	*			*				*	
*	*	*	*	*	*	*	*	*	*
V	V	V	V	V	V	V	V	V	V

When Word1 is an item of a specific lexical set, rhythmic conditions do not interfere with the application of elision. These lexical items can be defined in pre-theoretical terms as words that refer to and agree with the noun and precede it in the linear sequence (e.g. determiners, quantifiers, some forms of possessives, Wh- elements). The examples in (3), except the last one belonging to a Florentine informant, are taken from Agostiniani (1989); they exemplify the elision before a stressed V_2:

(3) *questa isola* ['kwest 'izola] "this island"; *codesto olio* [ko'dest 'ɔ:ljo] "that oil"; *un altro albero* [un 'altr 'albero] "an other tree"; *troppa acqua* ['trɔpp 'akkwa] "too much water"; *di molto olio* [di'molt 'ɔ:ljo] "a lot of oil"; *tanti alberi* ['tant 'alberi] "many trees"; *poca erba* ['pɔh 'ɛrba] "little grass"; *il nostro orto* [il 'nɔstr 'ɔrto] "our vegetable garden"; *vengo anche io* ['vɛŋg 'aŋk 'i:o] "(I) am coming too".

2.1.2. *Apheresis*

A second phenomenon of V-deletion in external sandhi is apheresis, in which in the sequence $V_1\#V_2$ the deleted vowel is the second (Agostiniani, 1989; Marotta, 1995; Savoia, 2023)[4]. The deletion of word-initial vowels takes place in two different contextual situations. In the first, which is widely observable in all Tuscan varieties, V_2 is [i] followed by a nasal-consonant cluster (see 4a) or, less frequently, by a geminate nasal or an [n]-vowel sequence (see 4b). The examples in (4b) are taken from Agostiniani (1989):

(4) a. *era impossibile* ['ɛra mpos'sibile] "(it) was impossible"
l'avevo incontrato [l a'vevo ŋkon'tra:θo] "(I) had met him"

b. *pareva immortale* [pa'reva mmor'ta:le] "(he/she) seemed immortal"
era inutile ['ɛra 'nuθile] "(it) was useless"

[4] Note that elision is in any case a possible alternative to apheresis, in all Tuscan varieties, e.g. *era impossibile* ['ɛr impos'sibile]. Thus, in all the examples reported from (4) to (8), elision can be observed instead of apheresis.

According to Agostiniani (1989), certain rhythmic configurations restrict the application of apheresis: if V_1 is stressed and V_2 is immediately followed by a stressed syllable, apheresis tends to be avoided (5a), whereas it applies without exception in all other stress conditions (5b). The data in (5) are from Agostiniani (1989):

(5) a. *re indiano* — *buffè interno*
*[re nˈdja:no] — *[bufˈfɛ nˈtɛrno]
"indian king" — "indoor buffet"

b. *donna impossibile* — *lavoro infame*
[ˈdɔnna mposˈsibile] — [laˈvo:ro ŋˈfa:me]
"unbearable woman" — "horrible job"
sofà imbottito — *re incoronato*
[soˈfa mboˈti:θo] — [ˈre ŋkoroˈna:θo]
"padded sofa" — "crowned king"

However, from the data I have collected concerning the Florentine variety, it appears that the strongest restriction is a lexical one, and that the deletion of *i-* is in fact limited to the form /in/ corresponding to the preposition and the prefix used for the derivation of various lexical categories (verbs, nouns, adjectives, adverbs). The data show, for example, that apheresis in the word *indiano* is considered unacceptable, even when the appropriate rhythmic conditions are met (6a); in this case, the hiatus is regularly avoided through elision. In contrast, apheresis is possible with the prefix/preposition /in/, regardless of the stress structure (6b):

(6) a. *ristorante indiano*
[*risto'rante nˈdja:no] [risto'rant inˈdja:no]
"Indian restaurant"

b. *il rosé in frigo* — *era in acqua*
[i rroˈze ŋ ˈfri:go] — [ˈɛra n ˈakkwa]
"the rosé wine in the fridge" — "(he/she/it) was in the water"
fatica inutile
[faˈθi:ha ˈnuθile]
"unnecessary effort"

The second type of apheresis is the one involving the preconsonantal form of the masculine singular definite article (henceforth DEF.M.S.) in the different forms it takes in the Tuscan varieties, i.e. *il*, *el* and *er* with rhotacisation in the Pisa and Livorno area (cf. Giannelli, 1976). The following examples are taken from Marotta (1995) (7a) and Agostiniani (1989) (7b):

(7) a. *bevo il caffè* — *prima il pane*
['be:vo l kaf'fɛ] — ['pri:ma l 'pa:ne]
"(I) drink the coffee" — "bread first"

b. *vedo il cane*
['ve:do r 'ka:ne]
"(I) see the dog"

The indefinite article is also subject to V-deletion when preceded by a vowel (cf. Agostiniani, 1989; Marotta, 1995), both in the masculine forms *un*, *uno* (8a) and in the feminine form *una* (8b)[5]:

(8) a. *bevo un caffè* — *bevo uno sgroppino*
['be:vo ŋ kaf'fɛ] — ['be:vo no zgrop'pi:no]
"(I) drink a coffee" — "(I) drink a 'sgroppino' (kind of alcoholic drink)"

bevo un analcolico
['be:vo n anal'kɔliho]
"(I) drink a non-alcoholic drink"

b. *bevo una tisana* — *bevo una aranciata*
['be:vo na ti'za:na] — ['be:vo n aran'ʧa:ta]
"(I) drink an infusion" — "(I) drink an orange soda"

bevo una spremuta
['be:vo na spre'mu:ta]
"(I) drink an orange juice"

[5] The utterances in (8) were produced by a speaker from Montecatini (western area of the province of Pistoia); apheresis in the indefinite articles *uno*, *una* is also widespread in many central and southern Italian dialects.

While the phenomena of apheresis of the article are widespread in Tuscany, Florentine shows very regular V-deletion in the morph /in/, but not in the article, neither definite nor indefinite. The Florentine DEF.M.S. has the form /i/ causing RS, while the indefinite article has the full forms *un*, *uno*, *una*. In both cases, the process that avoids the hiatus is elision:

(9) *bevo il caffè*
['be:v i kkaf'fɛ]
"(I) drink the coffee"
bevo un'aranciata
['be:v un aran'ʧaθa]
"(I) drink an orange soda"

bevo un caffè
['be:v uŋ kaf'fɛ]
"(I) drink a coffee"

More generally, elision appears to be a hiatus avoidance strategy alternative to apheresis, applicable in all contexts where apheresis is, and more frequently in speech that has a less evident local character (cf. Marotta, 1995). As just noted, in Florentine only elision is possible with articles.

The examples in (10) illustrate the fact that in some cases the same phonetic form may result from the application of different processes; the sequence /'prɛndi il 'primo/ "(you) take the first (course)" results in elision in Florentine, but may be affected by either elision or apheresis in other Tuscan varieties (10a):

(10)		Florentine	Other Tuscan varieties
a.	*prendi il primo*	['prɛnd i p'pri:mo]	['prɛnd il 'pri:mo] ['prɛndi l 'pri:mo]
b.	*prendo il primo* (1P)	['prɛnd i p'pri:mo]	['prɛndo l 'pri:mo]
	prendi il primo (2P)	['prɛnd i p'pri:mo]	['prɛndi l 'pri:mo]
	prende il primo (3P)	['prɛnd i p'pri:mo]	['prɛnde l 'pri:mo]

Interestingly, the two rules of V-deletion produce different results with regard to the phonetic expression of morphological information: as shown in (10b), apheresis preserves whereas elision destroys the verbal inflection related to Person.

2.1.3. *Apocope*

The third V-deletion phenomenon, observable in all Tuscan varieties, but more regularly in Florentine and Central Tuscan, is what Marotta (1995) calls apocope. In apocope, deletion affects the word-final vowel when it is in postvocalic position and takes place regardless of whether the target vowel is followed by a consonant or a vowel. In almost all cases, the vowel affected is /i/, which is why Agostiniani (1989) refers to the phenomenon as 'postvocalic final /i/ deletion'[6]. In all the examples in (11), which come from Florentine informants, Word1 has a final /i/ which is deleted by apocope:

(11)	a. /___ C	b. /___ V
	andai via	*andai a casa*
	[anˈda ˈviːa]	[anˈda a kˈkaːsa]
	"(I) went away"	"(I) went home"
	tu arriverai presto	*arriverai appena in tempo*
	[t arriveˈra ˈɸrɛsto]	[t arriveˈra apˈpeːna n ˈtempo]
	"you will come soon"	"you will come just in time"
	verrei con te	*verrei alle sette*
	[verˈrɛ hon ˈte]	[verˈrɛ alle ˈsɛtte]
	"(I) would come with you"	"(I) would come at seven"
	tu sei forte	*tu sei ospite mio*
	[tu ssɛ ˈfɔrte]	[tu ssɛ ˈɔspiθe ˈmiːo]
	"you are strong"	"you are my guest"
	tu hai detto tutto	*tu hai evitato il peggio*
	[t a ˈdetto ˈθutto]	[t a eviˈθaːθ i pˈpɛddʒo]
	"you have said everything"	"you have avoided the worst"
	poi bevo	*poi arriva*
	[ˈpɔ ˈbeːvo]	[ˈpɔ arˈriːva]
	"then (I) drink"	"then (he/she) arrives"
	non è mai venuta	*non ha mai offerto nulla*
	[unn ɛ mˈma veˈnuːθa]	[unn a mˈma ofˈfɛrto ˈnulla]
	"(she) has never come"	"(he/she) has never offered anything"

[6] Agostiniani (1989) restricts deletion to cases where *-i* is not the only inflectional morpheme in the word. However, the data in this regard are scarce and not sufficiently clear; I will not deal with this specific point.

Marotta (1995) also includes in apocope the deletion of vowels other than [i] under the same contextual conditions. The phenomenon is in fact limited to the numeral *due* → [du] "two", to the forms of the possessive (1SG, 2SG, 3SG/PL) *mio*, *mia*, *miei*, *mie*, [mi]; *tuo*, *tua*, *tuoi*, *tue*, [tu]; *suo*, *sua*, *suoi*, *sue*, [su]) and, except in Florentine, to the 1SG subject pronoun *io*, [i]. All the examples in (8) refer to Florentine except the last one, taken from Marotta (1995: 305), which concerns the variety of Siena:

(12) a. /___ C

il mio cugino
[i m'mi hu'ʒi:no]
"my cousin"
la tua sorella
[la 'θu so'rɛlla]
"your sister"
le sue macchine
[le 'su 'makkine]
"his/her/their cars"
due ragazzi
['du ra'gattsi]
"two boys"
io vado via
[ˌi 'va:do 'vi:a]
"I go away"

b. /___ V

il mio amico
[i m'mi a'mi:ho]
"my friend"
la tua ospite
[la 'θu 'ɔspiθe]
"your gest"
le sue analisi
[le 'su a'nalizi]
"his/her/their analyses"
due amici
['du a'mi:ʃi]
"two friends"

A similar process affects the vowel /i/ that corresponds to the DEF.M.PL. when it is not in absolute initial position. The phenomenon includes preposition + article fusions, and the prenominal forms of the adjective /'bɛllo/, pl. /'bɛi/ and of the determiner /'kwello/, pl. /'kwei/, that pattern with the definite article. In this case, the relevant context is only the preconsonantal one, since the prevocalic form is different ([ʎʎ], [ll] or [l] depending on the variety of Tuscan). The deletion of /i/ of DEF.M.PL. is very regular in the Florentine dialect, while it is much less frequent, but still observable, in Lucca (cf. Agostiniani, 1989; Marotta, 1995) and in Castelnuovo di Garfagnana. The following examples refer to Florentine:

(13) *porto i dolci*
['pɔrto 'dolʧi]
"(I) bring the desserts"
dei bei problemi
[de 'bɛ ɸro'blɛːmi]
"some (lit. of the) nice problems"
per i boschi
['pe 'bɔski]
"through the woods"
quei cani
[kwe 'haːni]
"those dogs"
dei sistemi
[de sis'tɛːmi]
"some (lit. of the) methods"
nei campi
[ne 'hampi]
"in the fields"
dai parenti
[da ɸa'rɛnti]
"by (lit. from) the relatives"

Marotta (1995) includes the phenomenon exemplified in (13) in the apocope, whereas Agostiniani (1989) considers it to be a separate process. Anyway, both authors emphasise the connection between the V-deletion of DEF.M.PL. and the apheresis of DEF.M.S. In section 4, we will see that the two phenomena are similar but require partially different analyses.

2.2. Raddoppiamento Sintattico *with definite article forms*

Both the dialect and the Italian spoken in Florence and the central Tuscan area present RS, a rule that under specific conditions produces the gemination of the initial consonant of a word. RS is also present in the remaining Tuscan varieties, although the contexts of application are partly different, and narrower[7]. In Florentine, RS is triggered in two different contextual conditions, such that the initial consonant of Word2 is geminated when either (i) the final vowel of Word1 is stressed; or (ii) Word1 is part of a set of lexical items, mostly but not exclusively made up of monosyllables. The RS of the second type originates from Latin antecedents that ended in a consonant which, in phrasal sequences, assimilated with the initial consonant of Word2, as in Lat. ET VIDES > [e vv]*edi* "and you see", QUOMODO + ET ME > *cóm*[e mm]*e* "like me" (Loporcaro, 2001: 273)[8].

[7] On the characteristics of RS in Tuscan dialects, see GIANNELLI (1976); AGOSTINIANI (1992); SAVOIA (2023); on RS in Italian and Italian dialects, see LOPORCARO (1997).

[8] On the diachronic origin of the RS due to stress and the relationship between the two types of RS, see LOPORCARO (1997; 2001). For an alternative explanation, see PASSINO (2013).

In the dialects examined here, i.e. those of Florence and Castelnuovo di Garfagnana, the forms of the definite article, singular and plural respectively, are RS triggers. Gemination extends to articulated prepositions, and to the prenominal forms of the adjective and determiner already exemplified in (13)[9].

(14) a. Castelnuovo di Garfagnana

i dolci	*dei sistemi*
[i d'dolʧi]	[de ssis'tɛ:mi]
"the desserts"	"some (lit. of the) methods"
dei bei problemi	*nei campi*
[dei b'bɛi ppro'blɛ:mi]	[nei k'kampi]
"some (lit. of the) nice problems"	"in the fields"
per i boschi	*dai parenti*
[pei b'bɔski]	[dai ppa'rɛnti]
"through the woods"	"by (lit. from) the relatives"
quei cani	
['kwei k'ka:ni]	
"those dogs"	

b. Fiorentino

il dolce	*del sistema*
[i d'dolʧe]	['di ssis'tɛ:ma]
"the dessert"	"of the method"
un bel problema	*nel campo*
[un 'bɛi ppro'blɛ:ma]	['ni k'kampo][10]
"a nice problem"	"in the field"
per il bosco	*dal parente*
['pei b'bɔsko]	['dai ppa'rɛnte]
"through the wood"	"by (lit. from) the relative"
quel cane	
['kwei k'ka:ne][11]	
"that dog"	

[9] In both dialects, the /i/ in the postvocalic position can be realised as a glide, e.g. [dej ssis'tɛ:mi], [pej b'bɔsko] (cf. Marotta, 1995).

[10] The prepositions *di* and *in* followed by the DEF.M.S. article /i/ may also appear in the form [dei], [dej] and [nei], [nej] respectively.

[11] A reduced form of the demonstrative is also possible: [kwi 'kka:ne].

In both these systems, RS interacts with the deletion of word final [i] due to apocope and with the deletion of the DEF.M.PL., as can be seen in the examples in (15). The data also exemplify the different contexts of application and non-application of RS. Notice that in both dialects the infinitive form of verbs may undergo the deletion of the final syllable, whose outcome causes RS (15a, b)[12]. In all examples in (15), word-final /i/ and DEF.M.PL. /i/ are both cancelled by apocope:

(15)		Florence	Castelnuovo Garf.
a.	*andare piano* "go (INF) slowly"	[an'da p'pjano]	[an'da p'pjano]
b.	*cercare funghi* "look (INF) for mushrooms"	[ʧer'ka f'fuŋgi]	[ʧer'ka f'fuŋgi]
c.	*cercare i funghi* "look (INF) for the mushrooms"	[ʧer'ka 'fuŋgi]	[ʧer'ka f'fuŋgi]
d.	*cerca funghi* "(he/she) looks for mushrooms"	['ʧerka 'fuŋgi]	['ʧerka 'fuŋgi]
e.	*cerca i funghi* "(he/she) looks for the mushrooms"	['ʧerka 'fuŋgi]	['ʧerka f'fuŋgi]
f.	*cercai funghi* "(I) looked for mushrooms"	[ʧer'ka 'fuŋgi]	[ʧer'ka 'fuŋgi]
g.	*cercai i funghi* "(I) looked for the mushrooms"	[ʧer'ka 'fuŋgi]	[ʧer'ka f'fuŋgi]

Examples in (15c, e, g) show how DEF.M.PL. /i/ reveals its presence and activity even when it is not phonetically realised: it blocks RS in

[12] The deletion of the final syllable of the infinitive of verbs, also known as *apocope*, is a feature of many central-southern Italian dialects, besides the Tuscan ones. In Florentine, this type of apocope is perceived as dialectal, and generally does not filter into Italian speech, where forms with elision, such as [ʧer'kar i fuŋgi], prevail in contexts like (15c).

Florentine (compare (15b) with (15c)) and triggers RS in Castelnuovo Garfagnana (compare (15d) and (15f) with (15c), (15e), (15g)).

2.3. *Intermediate summary*

On the whole, the V-deletion data can be interpreted as the effect of a tendency towards hiatus avoidance that is widely documented crosslinguistically. Nevertheless, a number of specific aspects, also concerning RS, emerge and raise interesting and problematic issues for a theoretical approach to the data.

A first issue concerns apheresis (see section 2.1.2). Florentine data show that the phenomenon is not uniquely conditioned by phonological factors and reveal the presence of lexical restrictions, as is evident in the contrast between, e.g. [risto'rante ŋkre'dibile] vs. *[risto'rante n'djano], although both the sequences respect the rhythmic requirements. The question is of theoretical interest and is part of the problem of linking the application of phonological processes to non-phonological conditions.

A second point emerges from the data regarding the dialect of Castelnuovo di Garfagnana. We see that the deletion of DEF.M.PL. /i/ does not prevent the application of RS, e.g. /'ʧerko i 'fuŋgi/ ['ʧerko f'fuŋgi] (see 15 c, e, g). In a strictly linear and derivational model this would require a rule ordering, in which RS precedes V-deletion, such that V-deletion does not bleed RS (cf. Marotta, 1995: 310). Rule ordering is incompatible with the model of phonological computation we have adopted, and a different explanation must be worked out.

A third question that needs to be considered relates to forms of the definite article, i.e. DEF.M.S. /i/ of Florence and DEF.M.PL. /i/ of Castelnuovo Garfagnana: they have the same phonetic form and both trigger RS. However, only the second of the two apparently identical forms undergoes deletion. Such a difference in behaviour is a problem for a derivational approach and requires the use of diacritics, in order to relate phonetic forms to lexical properties.

The next section will present some essential aspects of the theoretical framework that will be used for the analysis developed in section 4.

3. *The theoretical framework*

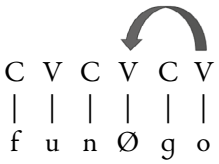
In this section, I will highlight some aspects of the theoretical framework, that are specifically relevant to the analysis to be proposed.

The theory adopted is Strict CV phonology (among others, cf. Ségéral and Scheer, 2001; 2008; Scheer, 2004; 2012; 2022a). Strict CV is a theory developed on the fundamentals established by Government Phonology (GP) (among others, cf. Kaye, Lowenstamm and Vergnaud, 1990; Charette, 1990; Harris, 1994), which in turn is a theory based on the autosegmental approach. In autosegmental theories the phonological forms of lexical units and the processes that apply to them within and across words are expressed through a multilinear representation. In a representational model, phonological processes are governed, and limited, by relations between segments within the relevant domains. The relations are essentially those between syllabic constituents and between stressed and unstressed positions. A property of non-linear models is that they, through the representation, impose locality restriction on the application of processes, significantly limiting the risk of overgeneration of phonological computation. The only processes possible in this type of representation are strictly context-dependent, in that they involve adjacent positions and may consist of delinking of features or spreading of features that are already present in the phonological environment.

An essential feature of Strict CV is the way in which it takes account of the linguistic variation concerning the form of possible syllables. Starting from the empirical observation that the basic, universal syllable is made up of a consonant and a vowel, in GP the variation is treated as the effect of parameters, which control the possibility of deviation from the fundamental Onset-Nucleus structure. Depending on the language, parameters do or do not authorise the absence of the Onset, the presence of a coda or the branching Onset. In contrast, in Strict CV, Onset-Nucleus is the only possible syllable, and phonological expressions are only made up of CV sequences, in any language (Lowenstamm, 1996). The representation of variation is thus reformulated as the possibility that a language admits empty and therefore si-

lent Nuclei, to separate clusters of phonetically realised consonants. A coda-onset cluster, for example, consists of a CVC sequence in which the nucleus is devoid of segmental content. This is made possible by a second essential feature of Strict CV theory, namely the assumption that the relations between segmental positions are only regulated by two types of strictly lateral (i.e. non-hierarchical) control, Government and Licensing. Both are exerted by a non-empty Nucleus towards a position to its left, be it its Onset or the preceding Nucleus. Government and Licensing have contrasting effects, as Government inhibits, and Licensing enhances the segmental expression of its target. Therefore, the relationship that allows the existence of empty nuclei is Government (Scheer, 2004: 139): each empty nucleus must be governed by a full nucleus to its right[13]. The following is a representation of a word containing a cluster coda-onset, in which the empty nucleus is governed by the full nucleus to its right (the arrow represents Government):

(16)



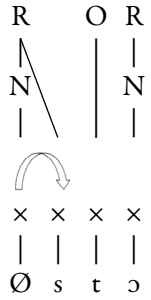
fungo "mushroom"

The assumption that the only syllabic structure is CV, brings about the proliferation of empty structure in the phonological representation, and assigns the empty nucleus a new role compared to the one it had in GP. In Strict CV, the empty nucleus appears in every word that contains a consonant cluster, and no longer only in cases where a vowel, although silent, reveals its presence through the phonological behaviour of the environment in which it is contained. In GP, the empty nucleus is the vowel that appears and disappears in vowel-zero alternations, or the vowel that authorises an onset in word final positions or an initial coda in words that begin with sC sequences; the latter case

[13] The case of branching onsets is different because the quality of the segments involved allows the nucleus within the cluster to be silenced without being governed by a subsequent nucleus (cf. 'Interconstituent Government', Scheer, 2004: 28-29).

is exemplified in (17) (the white arrow indicates the licensing by the empty nucleus on the following coda):

(17)



storia "history"

In Strict CV, instead, the empty nucleus in coda-onset clusters is phonologically inert and its role is to express within the representation the deviations from the basic syllable type. The difference between the two types of empty nucleus is obviously not ignored in Strict CV. Scheer (2004: 92) distinguishes three different types of nuclei, the full nucleus, the empty nucleus and the empty nucleus with floating segmental content (M stands for 'melodic content'):

(18) a. V b. V c. V
|
[M] [M]

As can be seen in (18), association lines do not have a simple notational function. In particular, (18c) represents unstable vowels that are contained in the lexical form of a morpheme or a word but only receive phonetic interpretation in specific conditions, i.e. when they are not followed by a full, and therefore governing, nucleus.

The phonological representation of Strict CV is minimal, being made up of segmental features, CV and lateral relations of Licensing and Government. Not an exception to this essential character is the part of the theory that concerns the connection between phonology and the other components of grammar. The representation of phonological processes that are conditioned by non-phonological factors does not involve specific devices, since everything is expressed through the same representa-

tional tools: CV and association lines. This conception fully belongs to a modular view of language, which has always been an essential feature of the generative architecture of grammar (cf. Chomsky, 1965). Grammar consists of three components each of which is specialised for a specific domain: morphosyntax, phonology and semantics. Each of these computational systems has access to information that belongs uniquely to that module and uses the 'vocabulary' specific to that module. Segmental features, CVs and lateral relations belong to the phonological vocabulary, while lexical or morphosyntactic information (e.g. lexical categories or inflectional features) does not (Scheer, 2004; 2012; Scheer, 2022a regarding the internal architecture of the phonological component).

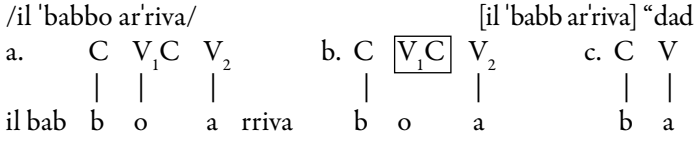
For the same reason, the syntactic distance, corresponding to morphosyntactic (word or syntactic phase) boundaries, that blocks the application of external sandhi rules is translated into the phonological representation as an empty CV (cf. Scheer, 2012). In the same vein, phonologically conditioned allomorphies can be represented through the use of association lines, in terms of lexical representations with unassociated segmental content (cf. Scheer, 2022b; Faust, Lampitelli and Ulfsbjorninn, 2018; Ulfsbjorninn, 2022).

4. *The analysis*

In this section we will address the phonological representation of V-deletion and its link with RS.

Let us begin with elision (see section 2.1.1). The deletion of a word-final unstressed vowel consists in the delinking of the final vowel, which is followed by the 'reduction' (Gussmann and Kaye, 1993; Ulfsbjorninn, 2022), i.e. the deletion of the resulting VC sequence, which is phonologically inactive (indicated in a box in (19b)). Hiatus avoidance is thus achieved as shown in (19c):

(19) /il 'babbo ar'riva/ [il 'babb ar'riva] "dad arrives"



As far as apheresis is concerned (see section 2.1.2), we have observed that that kind of V-deletion is indeed limited to the morph /in/ corresponding to the preposition and the prefix; moreover, in Tuscan varieties other than Florentine, apheresis is also observed in article forms. Given this distribution, we can represent apheresis as a lexical property of the items involved, i.e. the morph /in/ (20a) and the article forms, here exemplified with /il/ (20b). The initial vowel has a melodic content [i] lexically established but not associated with the nucleus: this is the condition of unstable vowels, which receive phonetic interpretation only under particular conditions[14]:

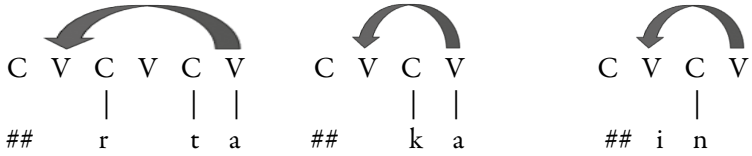
(20) a. C V C V b. C V C V
i n i l

To analyse the behaviour of these lexical elements in phrasal contexts, let us first consider the case in which apheresis cannot take place, i.e. the initial position of the utterance. Tuscan dialects, like other Italo-Romance varieties, belong to the type of languages in which the left boundary of the utterance in the phonological representation takes the form of an empty CV. This claim corresponds to empirical observations, i.e. the fact that in the absolute initial position no sonorant-obstruent cluster is allowed, and consonants do not undergo lenition. These facts are expressed in the representation through the concept of government of empty nuclei (Scheer, 2004; 2012). The first full nucleus of the word has the task of governing the nucleus that belongs to the initial empty CV; this precludes the presence of another empty nucleus in between, since this one would not receive government. This results in the effects mentioned above: the impossibility of initial sonorant-obstruent sequences (21a), since the cluster-internal empty

[14] Faust, Lampitelli and Ulfsbjorninn (2018) propose an analysis of the definite article of Italian that excludes the use of allomorphy. I will not take into account this issue here; the representation of the article in (20) is not to be understood as a statement on the subject, which is beyond the scope of the topic discussed here. The only relevant thing in that *i* is floating.

nucleus is ungoverned; the absence of lenition in the initial consonant (in the example, the block of spirantization of /k/ in Florentine) due to the fact that the onset is ungoverned and therefore in a strong position (21b); and finally, what is of interest to us, the absence of apheresis in the initial position (21c):

(21) a. *## rta b. ##[kaːsa] / [la ˈhaːsa] c. *##[ŋ ˈkaːsa]



Notice that the initial vowel of /in/ cannot be deleted in absolute initial position even in ##VnV sequences such as in /iˈnutile/ "useless", which shows that the exclusion of apheresis in that position is caused by merely structural restrictions, and not simply by the fact that it would create 'illicit' coda-onset sequences:

(22) a. *è inutile*
[ɛ ˈnuθile]
"(it) is useless"

b. *## inutile dire*
*[ˈnuθile ˈdiːre]
"needless to say"

Let us now consider the context in which apheresis is regularly applied, in all Tuscan (23a) and in non-Florentine varieties (23b)[15]:

(23) a. *stare in kasa*
[ˈstaːre ŋ ˈkaːsa]
"to stay at home"

cosa impossibile
[ˈkɔːsa mposˈsibile]
"impossible thing"

[15] As already noted, in Tuscan varieties elision is a hiatus avoidance strategy alternative to apheresis, and both [ˈstar iŋ ˈkaːsa] and [ˈstare ŋ ˈkaːsa] are possible. However, elision is the preferred solution in less dialectal and more controlled speech, and is the only one possible in Florentine for certain lexical items. We can therefore state that the two V-deletion processes belong to slightly different grammars and are not simply alternative rules competing in the system. If we take this view, we can maintain that apheresis is caused by a property of specific lexical items, and assume that the difference between Tuscan varieties with regard to this phenomenon lies in the lexicon: apheresis only occurs when the vowel is a floating segment.

b. *bevo il caffè* — *voglio un cane*
['be:vo l kaf'fɛ] — ['vɔʎʎo ŋ 'ka:ne]
"(I) drink the coffee" — "(I) want a dog"

We can now compare the cases in which apheresis is possible (24a) with the cases in which it is very disfavoured or excluded altogether (24b) (see above the examples in (6)), including the case just mentioned of absolute initial position (24c):

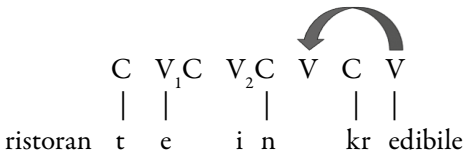
(24) a. *ristorante incredibile*
[risto'rante ŋkre'dibile]
"great restaurant"

b. *ristorante indiano*
*[risto'rante n'dja:no]
"Indian restaurant"

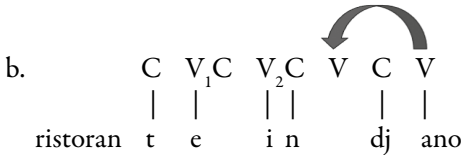
c. *## impossibile*
*[mpos'sibile]
"impossible"

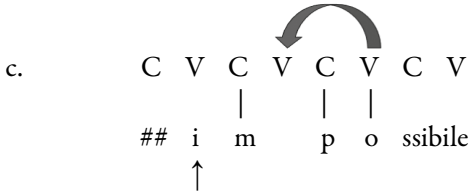
The difference between /in'djano/ and /inkre'dibile/ lies in the fact that the initial vowel is floating in the former (25a) but not in the latter case (25b); see also (20) above[16]. In (25c), the [i], which is floating in the lexical form, must necessarily be realised (this is indicated by the upwards arrow) because its nucleus cannot be empty, since it has the task of governing the previous nucleus.

(25) a.



[16] The representations in (25) are simplified, in that the branching onset is represented as a simple C; the structure of those clusters is not relevant to the topic at hand.





Notice that the configuration in (25a) poses a problem for the Strict CV Theory. In that model, empty nuclei, even those lexically endowed with a floating content, must always be governed; in (25a) the nucleus corresponding to V_2 is not governed since it is followed by an empty nucleus. As a matter of fact, what is observed is that it is sufficient for the application of apheresis that V_2 is preceded by a full nucleus, which is the case in (25a) but not in (25c). The sequence $V_1\#V_2$ in (25a) corresponds exactly to the one we have seen in the elision contexts (see 19b), which is modified to avoid the hiatus[17]. However, in this case, the floating segmental content corresponds to V_2 instead of V1, and this explains why the solution of the hiatus is apheresis (i.e. deletion of CV_2) instead of elision (i.e. deletion of V_1C).

Let us now consider the apheresis of the indefinite article, which can be observed in Tuscan varieties other than Florentine. Since the unreduced form is /uno/, which appears for example in the sentence final position, for this word both the initial and final vowels are lexically present, but floating (26a)[18]. We can extend also to this case the representation in which the hiatus corresponding to the sequence $V_1\#V_2$ is resolved through the deletion of V_1C, i.e. through elision (26b).

[17] The difference being that in (19b) the segmental content is delinked as an effect of the V-deletion rule, while in (25a) it is lexically floating.

[18] The difference between Florentine and the Tuscan varieties which show apheresis with the indefinite article, is that in Florentine the initial /u/ is not a floating vowel.

As a result of this deletion and ensuing reduction, the floating vowel [u] comes to be governed by the next full nucleus, and apheresis can also apply (26c)[19]:

(26) a. /uno/ C V C V
"a/an" | |
u n o

b. *è un amico* C V C V C V_1 C V_2
"(he) is a friend" | | | |
ɛ u n o a miko

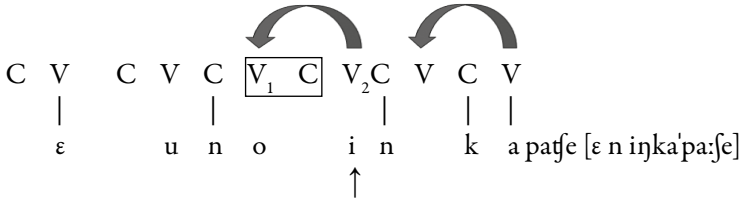
c. C V C V C V
| | | |
ɛ u n amiko ['ɛ n a'mi:ho]

Notice that with the prevocalic article elision is exceptionless ([*ɛ uno ami:ho], *[ɛ no a'mi:ho]), whereas apheresis is not, and the result with elision alone is also possible: [ɛ un a'mi:ho] along with [ɛ n a'mi:ho].

In the example in (27), the indefinite article is followed by a word derived with the prefix /in/, therefore with a floating initial vowel [i]. In this case, unlike (25a), the floating V_2 is not preceded by a full nucleus and must necessarily associate to its nucleus and receive phonetic interpretation. The V_1#V_2 hiatus is resolved by the deletion of V_1C, as in the elision cases. As a consequence, the initial vowel of the article in turn receives government by V_2 and the floating [u] may remain silent. This explains why V-deletion produces apheresis on the article but not on the adjective (the outcome *[ɛ no ŋka'paʃe] is impossible):

[19] The treatment proposed in (26) is reminiscent of Faust, Lampitelli and Ulfsbjorninn (2018) analysis of the prevocalic definite article.

(27) *è un incapace*
"he is a good-for-nothing guy"



Let us now consider the apocope and the deletion of the /i/ of the DEF.M.PL. In order to present the analysis of these phenomena we must also introduce the representation of RS, because, as we have seen, the two types of process are related. Since we are dealing with gemination caused by articles, the RS type we are interested in here is the one we defined in section 2.2 as being caused by a specific lexical item in Word1 position. The diachronic analysis there mentioned is completely in line with the representation of RS adopted in Strict CV. The unit that is attached to the initial onset of Word2, thus producing a geminate, is none other than an empty final CV of Word1, available to take on segmental content under the due conditions (for the treatment of RS in Strict CV theory see Passino, 2013)[20].

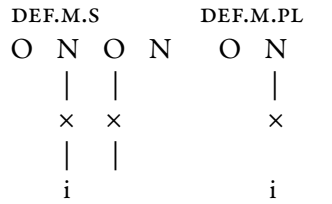
As seen in (14), the forms of the article that cause RS are DEF.M.S. in Florentine and DEF.M.PL. in the variety of Castelnuovo di Garfagnana. Therefore, the lexical representation of these words must contain a final CV, in which the onset is associated with a skeleton position but has no segmental content. Furthermore, the /i/ of plural articles, which is an unstable vowel, is represented as segmental content that is lexically established but not associated with any syllabic constituent; the same holds for the /i/ of the DEF.M.S. of Castelnuovo, that is targeted by apheresis. On the contrary, the /i/ of DEF.M.S. of Florentine is a stable vowel that is never cancelled. When in absolute initial position, the floating [i] must associate with its nucleus and receive phonetic in-

[20] In fact, the RS caused by stress is also represented through a final empty CV contained by Word1, so that the treatment of the two types of phenomena is unified (PASSINO, 2013).

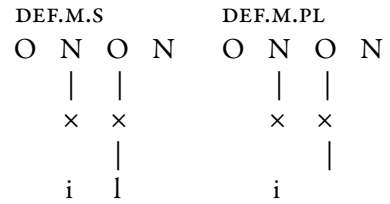
terpretation, while it can remain silent elsewhere. In (28), for clarity, temporal positions and syllabic constituents are represented separately:

(28) *taglio il fungo / taglio i funghi*
"(I) cut the mushroom/mushrooms"

a. Florence



b. Castelnuovo di Garfagnana



We can now examine the apocope of word-final [i]. Like the others, this is a rule aimed at hiatus avoidance, which is governed by external sandhi conditions (it does not apply in utterance final position), although it targets a word-internal hiatus. In fact, as we have seen, the syllabic and stress structure of Word2 is irrelevant. The parts of the lexical structure that undergo deletion are indicated in a box. The following examples refer to Florentine:

(29) a. *trovai subito*
"(I) found soon"

b. *trovai Oreste*
"(I) found Oreste (person name)"

Apocope must be represented as the complete deletion of the final CV and cannot be limited to the delinking of the melodic content, for two reasons. The first is that the CV preservation would produce

the configuration that gives rise to RS, a process that does not apply in this context (see 15f)[21]. The second reason is illustrated in the following representation, which corresponds to a sequence in which both apocope and apheresis take place. In (30), we see that if the final CV of Word1 were preserved together with the floating content of the nucleus, the conditions for apheresis of /in/ (30a) would not be created (recall that apheresis requires the presence of a full nucleus on the left). Instead, the apheresis is made possible by CV pruning, since the interested vowel comes to be preceded by a full nucleus and may be deleted (30b):

(30) a. *andai in casa*
"(I) entered the house"

b.

With regard to the deletion of DEF.M.PL. /i/, it is not possible to apply the same analysis. In (28), I proposed that the /i/ of plural articles is a floating vowel that only appears in absolute initial position, where it is not preceded by a full nucleus. This representation is necessary for Florentine where we need to distinguish the singular definite article, which is never deleted, from the plural definite article. Note that the

[21] Instead, RS is caused by the other type of apocope mentioned above, which consists in the deletion of the final syllable of the infinitive form of verbs (see above (15a, b)). Since this case of RS is also present in the Arezzo variety, which does not have RS caused by stress (cf. GIANNELLI, 1976: 79), it must be assumed that the apocope of *-re* causes the kind of RS due to the deletion of segmental content with preservation of skeleton positions. In any case, truncated infinitives trigger RS because they contain a final empty CV.

presence of RS is not related to V-deletion: /i/ DEF.M.S. of Florentine triggers RS and is not deleted, while /i/ DEF.M.PL. of Castelnuovo both triggers RS and undergoes deletion. This is summarized in (31), which explains the behaviour of the article DEF.M.S. (31a) and DEF.M.PL. (31b) in Florentine, and of the article DEF.M.PL. in Castelnuovo di Garfagnana (31c):

(31) a. *mangiai il pane*
"(I) ate the bread"

b. *mangiai i funghi*
"(I) ate the mushrooms"

c. *mangiai i funghi*
"(I) ate the mushrooms"

The representation in (31) can explain the simultaneous application of RS and V-deletion without resorting to rule ordering.

5. *Conclusions*

In this article, I have proposed a representational analysis of external sandhi rules involving unstable vowels and consonants, with the intention of accounting for various aspects of the phenomena that cannot be understood beyond a descriptive level in a derivational approach. It has been shown that the model adopted allows for a representation, and with it an explanation, of specific features

of the processes investigated that refer to lexical or morphosyntactic specificities, and that this result can be achieved without including in the representation information alien to phonology, such as diacritics, and the confinement of phonological rules to morphosyntactic or lexical categories.

More specifically, in order to explain the particular phonological behaviour of certain lexical elements, i.e. the prefix/preposition /in/, the definite and indefinite articles and the RS triggers, the representation can be diversified through association lines, which express differences in segmental/syllabic configurations. A nucleus can either be completely empty or have a melodic content that remains silent when conditions permit; the latter is the case for vowels that undergo apheresis and for the DEF.M.PL. article /i/. In the case of RS, an onset, whose melodic content is not lexically established, is predisposed to associate with a subsequent onset when is available, thus producing gemination. As we have seen, the two configurations are both present in the lexical form of the article DEF.M.PL. of the Castelnuovo di Garfagnana variety.

We have also seen that the analysed data reveal the existence of relations between syllabic constituents other than government in the strict sense. The analysis of apheresis proposed in section 4 shows that under certain conditions, a nucleus with floating content can remain silent even if ungoverned, provided it is preceded by a full nucleus. The theoretical significance and empirical validity of this hypothesis will be the subject of future research.

Finally, there is something about the phenomena discussed in this paper that remains unresolved for the time being. We have seen that, in its most general form, elision applies when V_1 and V_2 are both unstressed. However, it is not clear why the metrical structure of Word2 should be significant in this respect, nor how the representation can take this into account. One can perhaps speculate that this effect can be linked to other sandhi phenomena in which the stress structure of Word2 appears to condition the behaviour of Word1. For example, given the alternation *l*/*ll* in prevocalic definite article in some Italian varieties, the stress on the initial syllable of Word2 determines the presence of the geminated form [ll]

(cf. Agostiniani, 1980); similarly, the phenomenon of *l*-deletion in prevocalic definite article of some Southern Italian dialects only takes place when the following syllable is unstressed (cf. Bafile, 2012). This hypothesis about possible segmental effects of stress structure is also left for future work.

Conflict of interest and Authorship disclosure

There is no conflict of interest between any of the individuals involved in the publication process.

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