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The weight of empty structure:
Raddoppiamento Sintattico blocking in Teraman Abruzzese

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Abstract

This study presents an analysis of the blocking of *Raddoppiamento Sintattico*, an external *sandhi* process yielding geminate consonants in Italian and in some dialects of Italy. This analysis concerns data from the Eastern Abruzzese dialect spoken in Teramo, similarly attested in other Central-Southern dialects, where some cases of RS blocking cannot be explained assuming a syntacting conditioning. The analysis presented crucially relies on the presence of empty structure, namely structural positions specified for their consonantal or vocalic value to which no melodic material is linked. Postulating the presence of empty structure succeeds in providing a consistent and motivated phonological account of the cases of blocking of RS that cannot be ascribed to syntactic influence on phonology.

Keywords: *Raddoppiamento Sintattico*, empty structure, external sandhi.

1. *Introduction*

This study deals with *Raddoppiamento Sintattico* (henceforth RS)*,* a well-known process of consonantal gemination in external *sandhi* characteristic of Standard Italian, some of its varieties and some dialects of Italy. RS is a phonological process originating from a consonantal assimilation in *sandhi* (Schuchardt, 1874; Loporcaro, 1997b). It targets the first consonant[1] of the second word in two-word sequences and it may be triggered productively by oxytonic words or idiosynchratically by a restricted set of words. In (1) RS contexts are exemplified on Standard Italian adapting from Loporcaro (1997b: 1):

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[1] The initial consonant in word₂ lengthens only when singleton or part of tautosyllabic clusters whereas word-initial /s/ in s+C clusters does not lengthen. Different accounts are provided according to the theoretical framework in which the analyses of RS are couched. The present analysis subscribes to Larsen's (1998) account of such data but nothing crucial for the remainder of the argument hinges on this.

(1)   a.   word$_1$ is oxytonic or it is a stressed monosyllable

        andrà via [an'dra 'vvia]   'S/he will go away'
        sta male ['sta'mmaːle]   'S/he is feeling ill'

    b.   word$_1$ is part of a closed list[2] of unstressed monosyllables and polysyllabic non-oxytonic words (*a, da, e, che, fra, ma, né, o, se, su, tra, come, dove, qualche*)[3]

        che fai? [ke 'ffaːi]   'what are you doing?'
        come lui ['koːme 'lluːi]   'like him'

Among the many studies[4] that have been dedicated to RS in Standard Italian some have argued in favour of a syntactic conditioning of the phenomenon (Napoli and Nespor, 1979; Nespor and Vogel, 1986; Kaisse, 1985: 156-162). These analyses have been questioned by Agostiniani (1992: 38-39), Loporcaro (1997a, 1997b) and Absalom and Hajek (2005).

As for the Southern dialects of Italy, Fanciullo (1983-1986: 88-90) suggests a syntactic conditioning of the process. He bases his claim on the behaviour of lexical items that inconsistently act as triggers, as exemplified in (2) with data from Abruzzese, where *ccu* < PLUS 'more' causes RS only in the first sentence:

(2)   a.   [jess   e   'ccu ffɔrtə də te]   'he is stronger than you'
            SUBJ.3SG be3SG.P more strong than OBJ2SG

    b.   [jess   e   ffort ccu də te]   'he is stronger than you'
            SUBJ.3SG be3SGP strong more than OBJ2SG

Ledgeway (2009: 46) reports for Neapolitan the following key syntac-

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[2] Some variation is recorded among the different varieties of Italian with respect to this list. Not all members of the list act as triggers of RS in all Italian varieties. In addition, there are also some stressed monosyllables which trigger idiosyncratic RS like *tre* 'three', *ho*, *ha* 'to have1,3 sg'.

[3] The glosses are: *to, from, and, what/that, between, but, neither, or, if, up, within, like, where, some.*

[4] Contributions among just the last 40 years': Absalom and Hajek (1997), Absalom *et al.* (2002), Absalom and Hajek (2005), Agostiniani (1992), Borrelli (2002), Bullock (2000), Chierchia (1983-1986), D'Imperio and Rosenthall (1999), Kaisse (1985: 156-162), Kaye *et al.* (1990: 206), Fanciullo (1983-1986, 1997), Larsen (1998: 91 f.), Loporcaro (1988b, 1997, 2001), Marotta (1983-1986), McCrary (2002), McCrary (2004), Morén (1999), Napoli and Nespor (1979), Nespor and Vogel (1979, 1982, 1986), Nikiema (1992: 11-12), Repetti (1991), Saltarelli (1983, 2003), Sluyters (1990: 92), Stevens (2007), Trumper *et al.* (1991), Ulfsbjorninn (2007), Vincent (1988), Vogel (1982: 66-70), Vogel (1994).

tic relations that must hold between words in order for RS to take place: modifier-head, head-head, head-complement.

The focus of this paper is on some cases of RS blocking in the Abruzzese dialect spoken in Teramo (henceforth Teraman) that can arguably not be ascribed to syntactic influence on phonology. The phonological reasons of the blocking are explored so as to provide a consistent and motivated account of the data attested. As already shown in Passino (to appear) for RS in Italian, resorting to empty structure is of paramount importance in order to attain a unifying account of RS and other gemination *sandhi* phenomena of Italian, to understand and explain their different aspects.

In order to avoid arbitrariness and *ad-hoc* proposals concerning empty structure, this contribution is couched in a non-conventional phonological framework known as CVCV (Lowenstamm, 1996 and Scheer, 2004, among others), where empty structure is constantly referred to but its presence is regulated by the Empty Category Principle. In CVCV phonological constituent structure is argued to universally consist of a strictly alternating sequence of non-branching consonantal and vocalic positions. Thus a considerable amount of empty structure must be postulated underlyingly, from which actual surface strings derive.

Before illustrating the theoretical framework of reference and sketching the analysis proposed, next section introduces the data on RS blocking in Teraman.

2. Raddoppiamento Sintattico *in Teraman Abruzzese*

Eastern Abruzzese dialects, like Teraman, are traditionally classified as Upper Southern (Rohlfs, 1937; Pellegrini, 1977). The map in table 1, taken from Giammarco (1979: 88), shows the area of Abruzzi where Eastern Abruzzese dialects like Pescarese, Lancianese, Chietino, Vastese and Teraman are spoken.

As stressed by Loporcaro (1997a: 47), in Southern and Sardinian dialects RS is caused only by monosyllables and polysyllables with consonant-final etyma, whether their final vowel was stressed or unstressed. Teraman then, a Southern dialect, is only characterised by lexical RS, the idiosynchratic gemination triggered by a series of words that lost a final consonant in diachrony (*come* < Lat. QUOMODO ET, *tre* < Lat. TRES etc.).
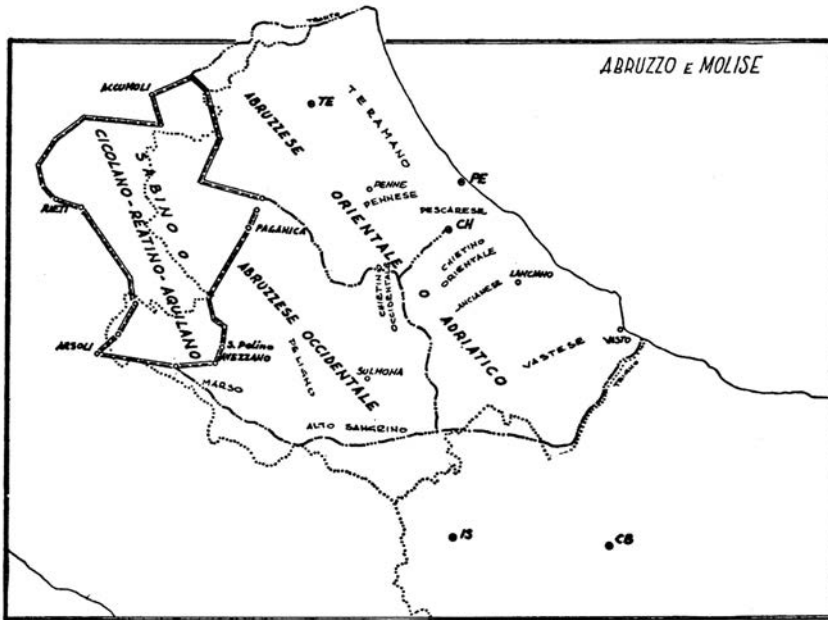
Table 1. *Linguistic Map of Abruzzo (Giammarco, 1979: 88)*

The synchronic RS, productively triggered by stress, on the other hand, characterises the standard variety of Italian and a few Italo-Romance dialects like Tuscan, Roman, Corse and Sassarese-Gallurese, also characterized by the idiosynchratic RS (Loporcaro, 1997b). The description of RS in the Abruzzese dialects is not systematic nor exhaustive, apart from the study of Hastings (2001). Before this contribution only brief notes on RS in Abruzzese are available (Savini, 1881; Giammarco, 1958: 28).

In the Southern dialects the list of lexical triggers of RS displays a certain amount of dialectal microvariation. A list of words[5] that trigger RS in Teraman is provided in (3)[6]:

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[5] Among RS triggers there are also prefixes like *ndræ-*, and *ʃtræ-*.

[6] A similar list, from which the above list has drawn inspiration, is provided by Hastings (2001) for Tollese, an Eastern Abruzzese dialect spoken about 60 km south of Teramo, near Pescara. Bigalke (1996: 13) lists the Latin ancestors of the RS triggers in Abruzzese but his list is not exhaustive. Both lists include Lat. NON or its outcome. The latter, however, has been shown not to be an idiosynchratic RS trigger in Teraman (Passino, 2009) but to cause synchronic assimilation in external *sandhi* (cf. also Ledgeway, 2009: 45 for Neapolitan). A list of triggers, although shorter and incomplete, is also provided by Savini (1888: 54), Giammarco (1958: 28) and Rohlfs (1966: 237).

(3)   *æ* 'at', *e* 'and', *kə* 'that, which, what', *né* 'neither', *sə* 'if', *su* 'up', *ju* 'down', *trɛ* 'three', *ccu* 'more', *ŋgə* 'with', *pə* 'for', *sə* 'BE1SG', *si* 'BE2SG', *ɛ* 'BE3SG', *lə* 'there', *ndæ* 'like', *kækkə* 'some', *ɔɲɲə* 'every', *kumə* 'like(adv)'.

In Teraman, like in other Southern dialects of Italy, a syntactic conditioning of the process could be posited (cf. D'Alessandro and Biberauer, 2006 for Ariellese, a dialect spoken in the Abruzzese district of Chieti) since often what appears as the same lexical item inconsistently triggers RS, as exemplified in (4) with data from Teraman:

(4)   a.   [ndæ mma]   'Like me'

       b.   [ndæ vævə]   'How he drinks!'

However, as suggested by a reviewer, further research is needed to assess to what extent words that inconsistently trigger RS are in fact the same lexical item in all cases.

What is of interest for the scope of the present contribution are those cases where RS is blocked after a RS trigger and an explanation in terms of syntactic influence on phonology is not available, thus a purely phonological explanation of the facts must be sought. Such cases, where RS is blocked before definite and indefinite articles (Giammarco, 1960: 28), are illustrated in (5) and (6):

(5)   RS blocking before definite articles (*lu* M.SG *læ* F.SG *li* M/F.PL)

a)			b)		vs. c)		
a læ	ˈkæːsə	'at home'	* a llæ ˈkæːsə[7]		a ˈllondrə	'in London'
ŋgə	læ ˈtsæppə	'with the hoe'	* ŋgə llæˈtsæppə		ŋgə ˈlliːnə	'with Lino'
pə	lˈæˈmoːrə	'for the sake'	* pe ll æˈmoːrə		pə lluˈtʃiːjə	'for Lucia'
su	li ˈkæːsə	'up there at the houses'	* su lli ˈkæːsə		su ˈllu:tʃə	'up there at Lucio's'

(6)   RS blocking before indefinite articles (*næ* F.SG *nu* M.SG)

a)		b)		vs. c)		
ɦɛnu frəˈki		*ɦɛnnu frəˈki	'it's a child'	ɦɛnnæˈtæːlə	'It's Christmas'
pə næ ˈkoːsə		*pə nnæˈkoːsə	'for a thing'	pə ˈnonnəmə	'for granpa'
ŋgə næˈmiːkə		*ŋgə nnæˈmiːkə	'with a friend'	ŋgə ˈnnuːjə	'with us'
ndæ nuːˈʃʃɛːmə		*ndæ nnuːˈʃʃɛːmə	'like a fool'	ndæ ˈnnuːjə	'like us'

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⁷ The phrases in (5b) are not truly agrammatical but they do not result from the application of RS. The initial geminate is lexical and part of a different lexical item: *ŋgə llæ tsæppə means* 'with <u>that</u> hoe' not 'with <u>the</u> hoe' and so on.

As it can be observed in (5) and (6), the triggers precede a DP both in the cases where RS is blocked (5a, 6a) and in the cases in which it takes place (5c, 6c). In addition, the data in (7), where RS takes place when the target is a definite article, exactly like in (5 a) where RS is blocked, suggest to completely abandon the idea of a possible involvement of syntax in the blocking:

(7)   pə ll'ˈæsənə   'for the donkey'
       ŋgə ll'ˈɔvə   'with the egg'
       su ll'ˈuccə   'in the eyes'

What sets apart the data in (5) and those in (7) is the position of stress. In (7), where RS takes place as expected after a lexical RS trigger, the articles precede a word beginning with a stressed vowel. In (5), where RS is blocked, the articles precede a word beginning with a consonant or an unstressed vowel. The data then hint at a phonological explanation of the pattern recorded.

RS is blocked before definite articles also in other dialects like Romanesco (Loporcaro, 1997a: 44; Rohlfs, 1966: 237) and Calabrese (Rohlfs, 1966: 238). Hastings (2001) describes the Abruzzese pattern exemplifying on the dialect of Tollo.

In addition, some dialects of Italy are characterized by a generalised lengthening of the prevocalic definite article /l/, so that /ll/ is found also in non RS context. Agostiniani (1980) describes Tuscan varieties where the prevocalic definite article is a geminate /l/ in Southern Tuscany whereas non prevocalic articles resist lengthening in RS contexts and preposition-article clusters. On the contrary in the dialects of the Florentine area the prevocalic article /l/ displays a singleton realisation unless it is in a RS context or part of a preposition-article cluster. A geminate prevocalic article is also attested in Neapolitan, among other dialects, if the vowel is stressed (Bafile, 2003).

This, however, is not the case of Teraman, where the prevocalic article is a singleton /l/, which lengthens in RS contexts only if followed by a stressed vowel[8], calling for an account related to the workings of RS. Before sketching such an account in Section 4, the theoretical presupposals needed to understand the analysis are illustrated in the next section.

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[8] An identical pattern is described by Loporcaro for the dialect of Altamura (LOPORCARO 1988a: 242).

3. *Theoretical presupposals*

This section is devoted to the illustration of the theoretical framework assumed here, known as CVCV (Lowenstamm, 1996 and Scheer, 2004, among others). A brief introduction to the theory is sketched with particular regard to the Coda-Mirror Theory of lenition and fortition (Ségéral and Scheer, 2001, 2008), which is essential to the understanding of the proposal.

3.1. *CVCV, a lateral theory of phonology*

CVCV is a theory of phonology first proposed by Lowenstamm (1996) and further developed by Scheer (2004), Szigetvári (1999) and Rennison and Neubarth (2003), among others. It evolves from Government Phonology (Kaye *et al.*, 1985, 1990) whose original research program was to build «a syntax of phonological expressions» (Kaye, Lowenstamm and Vergnaud, 1990: 193).

CVCV, according to the definition of Scheer (2004), is a syntagmatic, or lateral, theory of phonology. This refers to the fact that in CVCV the phonological constituent structure boils down to a strict sequence of non-branching onsets and non-branching nuclei, and that all syllabic effects are derived from a network of lateral relations entertained by segments. The lack of branching constituents and arboreal structure means that syllabic structure in CVCV is entirely flat. In CVCV the minimal syllabic unit that may be manipulated by phonology is a CV unit, namely an onset-nucleus sequence; the presence of the former entails the presence of the latter and vice versa (Scheer, 2004: 1).

The absence of branching constituents in the phonological representation implies the proliferation of empty structure. The CVCV representation of some common phonological objects, exemplified in (8), illustrates this situation:

(8) closed   geminate: *tt*   long vowel: *a:*   word-final C: *t#*   branching
     syllable: *tar*   onset: *tra*

     C V C V   C V C V   C V C V   ... C V   C V C V
     | | | | \ /   \ / | | | | | |
     t a r ø   t   a   t ø   t ø r a

In CVCV, as in standard Government Phonology (Kaye *et al.*, 1985, 1990), the presence of empty nuclei is not arbitrary but is regulated by the

Empty Category Principle (ECP). The ECP version proposed by Scheer (2004: 67) is illustrated in (9):

(9)   Empty Category Principle (ECP)

        A nucleus may remain empty if it is:
            a.   properly governed
            b.   enclosed in a domain of Infrasegmental Government
            c.   word final

Proper Government, mentioned in (9a), is a regressive lateral force that inhibits segmental expression. Word-internally, Government can only be exerted by full nuclei. As for final empty nuclei, their governing ability is the object of parametric variation.

Infrasegmental Government covers all functions traditionally attributed to a branching onset with some minor differences not relevant to this discussion (cf. Scheer, 2004: 72).

Proper Government and Infrasegmental Government, as seen above, are lateral regressive forces that inhibit segmental expression of nuclei. There is, however, another lateral relation, Licensing, that enhances segmental expression, also dispensed by full nuclei word-internally or word-finally by parameter. Government and Licensing, lateral antagonistic forces, are solely responsible for effects commonly attributed to syllabic structure, and their existence accounts for empirical data concerning cross-linguistic phonological phenomena. Among these are the lenition/fortition phenomena illustrated in Section 3.2.

3.2. *The coda-mirror*

Across languages, consonants in word-final positions and consonants preceding heterosyllabic consonants, unified under the name 'coda' in traditional phonological frameworks, are often targeted by the same kind of lenition phenomena, i.e. /l/ vocalisation in Cockney English (Wells, 1982: 313-317, among others). Intervocalic context is likewise a context prone to lenition, although sometimes of a different kind, i.e. Tuscan lenition of stops (Marotta, 2008, among others). On the contrary, consonants in word-initial positions and consonants following heterosyllabic consonants have been observed cross-linguistically to resist lenition or undergo fortition, i.e. the distribution of Somali underlying stops (Ségéral and Scheer, 2001).

Starting from these observations, Ségéral and Scheer (2001) set out to unify the disjunctive contexts that resist lenition, also known as 'strong position' (Schuchardt, 1874 among others), and to provide an explanation for the relative strength of positions in the phonological string. The 'strong position', as opposed to the coda context, the authors observe, has not been a topic investigated by phonological theories to date: ordinary syllable theory is not able to provide a unification of word-initial and post-coda consonant contexts without also including a description of the intervocalic context, which, however, does not display the characteristics of the strong position. In orthodox syllable theory all three contexts would fall under the definition of onset. On the other hand, an appeal to functional/psycholinguistic reasons concerning the saliency of the word-initial position to explain its resistance to lenition, fails to account for it patterning with the post-coda position.

What Ségéral and Scheer (2001) first call attention to is the fact that the disjunctive context where consonants are observed to resist lenition is the mirror image of the coda context, where lenition is observed to take place across languages, as shown in (10):

(10)   a.   *Coda*   _{.C, #}
        b.   *Strong position*   {#, .C}_

What is empirically observed, then, is a coda position targeted by phonological processes of weakening and its mirror image, targeted by fortition processes or at least resistant to lenition. There are enough empirical reasons, according to Ségéral and Scheer (2001), to capture the disjunctive context, or the coda-mirror, as they call it, as a unique phonological object.

In CVCV, the representation of words includes an initial empty CV site denoting the beginning of the word (Lowenstamm, 1999), namely the phonological translation of # in SPE-type vocabulary. Not all languages display an empty CV in word-initial position; only languages that restrict word-initial clusters to obstruent-sonorant sequences (TR) do so. Languages like Moroccan Arabic or Czech, which also allow sonorant-obstruent (RT) sequences at the beginning of words are not characterized by an empty CV (Lowenstamm, 1999; Scheer, 2004: 485). In the latter languages, word-initial consonants are not strong and, as far as lenition is concerned, pattern with their intervocalic peers (Scheer, 2008: 736-737). This provides evidence for the coda-mirror theory of lenition and fortition, which ascribes to an empty nucleus the power of placing a consonant in a strong position when the empty nucleus precedes it, as illustrated below.

In a representation where the word-initial position is demarcated by an initial CV, the coda-mirror may be captured non-disjunctively as a consonant situated <u>after</u> a governed empty nucleus. According to the ECP, the empty nucleus of the initial CV must be governed in order to remain empty. Government is then attracted by this empty nucleus, leaving the word-initial consonant in the best situation possible: it escapes Government while enjoying Licensing.

This is illustrated in (11) where, adapting from Ségéral and Scheer (2001), word-initial and post-coda consonants are shown to resist lenition in the evolution from Latin to French:

(11)   a.

$$\text{Gvt} \qquad \text{Gvt}$$
$$\swarrow \text{Lic} \quad \swarrow \text{Lic.}$$
$$[\text{C V}] \underline{\text{C}} \text{ V C V C } \underline{\text{C}} \text{ V}$$
$$\mid \mid \mid \qquad \mid \mid$$

Lat.   ø p o r ø <u>t</u> a   > *Fr.* por<u>t</u>e [pɔʀt] 'door'

b.

$$\text{Gvt} \qquad \text{Gvt}$$
$$\swarrow \text{Lic} \quad \swarrow \text{Lic}$$
$$[\text{C V}] \underline{\text{C}} \text{ V C V } \underline{\text{C}} \text{ V}$$
$$\mid \mid \mid \qquad \mid \mid$$

Lat.   <u>t</u> a l ø <u>p</u> a >   *Fr.* <u>t</u>au<u>p</u>e [top] 'mole'

In CVCV then, not only the graphic notation, but also the structural position of the coda-mirror forms the mirror image of the coda. What is usually known as the coda is defined in CVCV as a consonant situated <u>before</u> an empty nucleus, and is thus neither governed nor licensed. As illustrated in (12), a consonant situated before a governed empty nucleus underwent weakening in the evolution from Latin to French.

(12)

$$\text{Gvt}$$
$$\text{Lic}$$
$$[\text{C V}] \text{ C V } \underline{\text{C}} \text{ V C V}$$
$$\mid \mid \mid \qquad \mid \mid$$

Lat.   ø r u <u>p</u> ø t a   *Fr.* route [ʀut] 'street'

In addition to unifying a disjunctive context (descriptive adequacy), Ségéral and Scheer (2001) succeed in explaining why it is that consonants undergo weakening processes in coda positions while they resist lenition in coda-mirror positions (explanatory adequacy). Their argument is as follows. Government is a lateral regressive force that spoils the melodic content of its target, whereas Licensing gives way to the enhancement of its melodic

expression. Observing the coda-mirror structural position shown in (11), it is seen that the vowel following the coda-mirror is in a position to license but not govern the coda-mirror since, as far as Government is concerned, this vowel must govern the preceding empty nucleus. Government and Licensing are forces that must be manifested, but they may be exerted only once by each nucleus. Therefore, consonants situated in the coda-mirror position enjoy Licensing without being targeted by Government. The consonants in the coda position, on the other hand, are neither governed nor licensed by the following nucleus because empty nuclei are not endowed with any lateral actorship. This difference in the Licensing of coda and coda-mirror consonants accounts for the difference in strength with which consonants placed in those positions are characterised. As opposed to the coda-mirror, the coda does not enjoy Licensing. This makes consonants in coda positions prone to weakening. The intervocalic position, on the other hand, has been observed to not pattern exactly with any of the positions described so far. It sometimes patterns exactly with the coda, but not always. Contrary to consonants in coda, which are neither governed nor licensed, intervocalic consonants are both governed and licensed[9]. The lenition of intervocalic consonants is exemplified in (13), again with data from the diachrony of French:

(13)   Gvt   Gvt
                                          Lic
                           [C V] C V C V
                                  | | | |
          Lat.   r i p a   *Fr.* rive [ʀiv] 'shore'

   A theory of lenition that refers to structural positions, where strength is ascribed to the action of two independently motivated forces, Government and Licensing, succeeds in unifying a disjunctive context that is observed to resist lenition. It also explains why the various positions in strings react differently to the effect of the phonological lenition or fortition phenomena taking place in a language. Such a theory, nevertheless, does not predict lenition or fortition to apply to consonants in weak and in strong positions respectively. It only predicts a potential difference of consonantal strength in languages according to the structural position of the consonants at hand.

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[8]   According to the revised model of coda-mirror proposed in ZIKOVÁ and SCHEER (2010), Government applies over Licensing when both may potentially apply. Accordingly, intervocalic consonants are only governed by the following nucleus and therefore undergo the spoiling effect of Government, which makes them prone to lenition. The intervocalic position is therefore a weaker position than the coda, which does not experience any lateral influence (codas are ungoverned and unlicensed).

Strength and weakness may or may not have melodic effects as outcomes. But if they do, there will be an implicational relationship as predicted by the theory: a coda will never resist lenition if the coda-mirror undergoes such phonological process, and a coda position will never undergo strengthening if the coda-mirror does not.

4. Raddoppiamento sintattico: *an alternative proposal*

Having introduced the theoretical tools needed to understand the analysis advanced here, this section recapitulates the main features of the analysis of RS proposed in Passino (to appear). In this proposal *Raddoppiamento Sintattico* is analysed as a fortition process originating as an effect of the phonological representation of the words subject to *sandhi,* where a strong position arises. In the literature, on the other hand, it is generally agreed that productive RS, triggered by stress, is an epiphenomenon of well-formedness conditions on syllable structure, a phenomenon related to tonic lengthening, whereby consonants are lengthened instead of vowels. The alternative representational account of RS proposed in Passino (to appear) allows the productive and the lexical RS to be unified under the same phonological representation thus eliminating a circular explanation and diacritic marking in the description of idiosyncratic RS since the latter phenomenon, whereby some lexical items idiosyncratically trigger RS, is usually attributed to a diacritical marking of the triggering lexical items. The analysis of both cases of RS is respectively summarized in 4.1 and 4.2. In 4.3 the representation of RS triggers in the Southern varieties of Italian and in the dialects of Italy is discussed.

4.1. *Synchronic* Raddoppiamento sintattico

In some varieties of Italian, most notably Roman and Florentine, vowel-ending oxytonic words and stressed monosyllables, as seen in (1a), systematically determine the lengthening of the first consonant of the following word. For the sake of clarity those cases are illustrated again in (14):

(14)   te freddo [ˈtɛ ˈffreddo] 'Iced tea'
        andrà via [anˈdra ˈvviːa] 'S/he is going away'

The process also applies when word$_1$ is a nonce form or a loanword, meaning that it is regular and synchronically active (Loporcaro, 2001: 271). Examples of this are illustrated respectively in (15):

(15)   a.   bub'bu 'ssɛttete
       b.   karka'dɛ 'kkaldo 'hot hibiscus tea'

As previously mentioned, the causes of this phonological process have been claimed by many scholars to be prosodic: the extra slot projected by stress (Chierchia, 1983-1986) and the requirement on stressed Italian syllables that they be heavy determine gemination of the first consonant of the word following an oxytonic word so that an underlyingly light syllable becomes heavy in surface. This happens because final stressed syllables are light in Italian.

Passino (to appear) proposes that RS is not determined by a prosodic requirement but that originates from the phonological representation of the words involved as a positional effect: the word$_2$-initial consonant finds itself in a strong position when the sequence word$_1$ word$_2$ is spelled out in the same phase. As argued above, a strong position is a *locus* of fortition and therefore it may, like in the case at hand, strengthen a consonant to a geminate, as will be illustrated in detail.

In all accounts of RS, it is stress that triggers RS, albeit for different reasons. That stress is behind synchronically active RS is a consensual fact. Following Chierchia (1983-1986), it is claimed here that in synchronically active RS, gemination results from the extra structural space projected by stress and it therefore originates from the phonological representation of oxytonic words. As opposed to Chierchia, however, it is argued here that filling this structural space through spreading of the melody of a consonantal segment is not driven by well-formedness conditions on Italian rhymes but it is a fortition effect.

In Chierchia's proposal, stress projects an extra slot following the stressed light open syllable. This extra space results in vowel lengthening in word-internal position and in consonantal lengthening in the phrasal domain. In CVCV, however, a CV unit is the minimal unit that can be handled by phonology, as the presence of a nucleus always entails the presence of an onset and *vice versa*. It is therefore argued that in Italian stress projects a CV unit to the right of the stressed syllable as proposed by Larsen (1998). In word-internal positions, the extra CV results in tonic lengthening in open non-final

syllables. In closed syllables and in word-final positions, the CV projected by stress is not supported because it is not followed by any contentful nucleus that can entertain lateral relations. The empty nucleus cannot license the spreading of the preceding vowel so tonic lengthening is blocked.

Under the assumption that stress projects empty structural space in the shape of an empty CV, the representation of Italian oxytones is shown in (16), where a CV is projected but vowel lengthening does not take place:

(16)   C V C V [C V] $_{stress}$
        | | |
        s   t ɔ

When inserted in the phrasal domain, accordingly, the phonological re-presentation of oxytonic words followed by a consonant-initial word is the one shown in (17), where an empty CV becomes internal to the phonological string and subject to interpretation:

(17)   C V C V [C V] C V C V
        | | | | | | |
        s   t ɔ   ma l e   sto ˈmaːle 'I am ill'

The empty nucleus of the CV projected by stress must be governed by the following full vowel in order to remain silent. The initial consonant of word$_2$, therefore, escapes the Government exerted by the following vowel while enjoying the Licensing it provides. As seen in Section 3.2, this means that the consonant at hand is in a strong position, as illustrated in (18):

(18)   Gvt
                           ⌒
        C V C V [C V]   C V C V
        | | | | | |
        s   t ɔ   ma l e

As a *locus* of fortition, the strong position induces strengthening of the consonant that finds itself in that position, namely the initial consonant of word$_2$ as shown in (19):

(19)   Gvt
                           ⌒
        C V C V [C V]   C V C V
        | | | | | |
        s   t ɔ   ma l e

In this analysis, an empty CV internal to the phonological string is

subject to interpretation and confers positional strength on the initial consonant of word$_2$, yielding gemination. The details of this analysis as well as the advantages are not relevant for the present discussion and are further discussed in Passino (to appear), where the analysis is fully deployed and to which the interested reader is referred.

The analysis of RS advanced here concerns synchronic RS, whereas idiosynchratic RS is addressed in next section.

4.2. *Lexically encoded* Raddoppiamento sintattico

Idiosynchratic RS, where a closed list of words triggers RS, is generally accounted for by appealing to lexical marking: the literature agrees that, since there is no way to synchronically derive the phenomenon by phonological features of the words involved in the *sandhi*, the words must be marked in the lexicon as triggers. What is proposed in Passino (to appear) and illustrated here, is that those words not be diacritically marked, as often assumed, but that their representation include a final empty CV as the result of the loss of melody to which the loss of structural space did not correspond (cf. Bafile, 2003: 155 for a similar proposal for Neapolitan). RS triggers such as *tre* < *Lat*. TRES, 'three', *a* < *Lat*. AD, in other words, keep the structural shape that characterized the corresponding Latin words despite the loss of melodic material, namely the word-final consonant[10], as illustrated in (20):

(20)   *Lat.*   C V C V   *It.*   C V C V
               | | |
               a d   a

Accordingly, the phonological representation of the lexical triggers and the phonological representation arising when they are followed by a consonant-initial word in *sandhi,* illustrated in (21a), is the same as the one shown in (19), illustrated again in (21b). In (21a) there is an empty CV that is a structural relic of a past stage of the language whereas in (21b) the empty CV is projected by stress. The same phonological representation illustrated in (21a, b) also results in the same phonological process, namely the lengthening of the initial consonant of word$_2$:

---

[10] Recall that an empty CV is the minimal unit that can be manipulated by phonology. A consonantal position thus entails a vocalic position and *vice-versa*.

(21)   Gvt

a.   C V C V C V C V
             | ╲ | | | |
             a   k a s a   [aˈk:asa] 'at home'

                                    Gvt

b.   C V C V [C V] C V C V
            | | | | | | | |
            s t ɔ   m a l e   [stɔ ˈm:ale] 'I am ill'

The representations in (21) neatly account for the application of RS, intended as fortition driven by positional factors, in standard Italian and in those varieties where both stress-conditioned and lexical RS apply, namely Roman and Florentine. Next section discusses the representation of RS triggers in the Southern varieties and dialects characterized by tonic lengthening where only lexical RS is active.

4.3. Raddoppiamento Sintattico *in the Southern varieties and dialects*

As mentioned above, Southern Italian varieties and dialects generally lack the productive synchronic RS and are characterised only by idiosyncratic RS. In those dialects and varieties characterized by tonic lenghtening (Abruzzese, Neapolitan, Salentino, Logudorese and Campidanese Sardinian, Sicilian and Garganic Apulian among others), where stress then projects empty structural space in the shape of an empty CV, the representations of oxytonic words and that of RS triggers must differ, otherwise they would yield the same phonological event, namely consonantal lengthening, contrary to fact. The phonological computation, in compliance with modularity, is blind to the origin of the empty material and is only able to process it as such. Following these theoretical assumptions, in languages such as the Southern dialects where stress by means of its empty CV does not yield RS in *sandhi,* the possibility that a relic empty CV part of the lexical representation may trigger RS must be excluded. As for the relationship between stress and RS, the difference between Standard Italian, Roman and Florentine on the one hand, and the Southern varieties on the other hand, is parametric so it must not depend on different representations: the empty CV projected by stress is present in all cases but it only triggers RS in the former. On the contrary, the reason why in Southern varieties and dialects RS can be triggered idiosynchratically but not productively must depend on a different represen-

tation of the idiosynchratic triggers with respect to oxytonic words, which trigger RS productively in the Standard variety.

A slight modification of the representation of words that trigger idiosyncratic RS in Southern dialects and in the Southern varieties, whose relationship with Latin is not direct but mediated by the Southern dialects, is in order then, to make sense of historical, synchronic and geographic facts. I propose to represent RS triggers in the Southern dialects and varieties, where only a closed list of items idiosyncratically triggers the process, as endowed of an association line in the C position, as illustrated in (22).

(22)   C V C V
                 | |
                 a

This association line determines the surfacing of a geminate consonant in word$_2$-initial positions every time a consonant-initial word follows in *sandhi*, giving the association line the chance to attach to consonantal melody during computation. This representation makes sense from the viewpoint of diachronic evolution: it is not implausible that when final consonants were lost in the phonological erosion that characterised the evolution of Latin to the dialects of Italy, in some cases only the first part of a segment depletion took place, namely the delinking of melody from structural space, leaving everything else – structure and association line – in place (cf. for a similar proposal Loporcaro, 1988b; Bertinetto and Loporcaro, 1988 and Passino, to appear, who extend it to other languages). In other Italo-Romance dialects such as the Calabrian and Lucan dialects very close to the Lausberg area (Rohlfs, 1966: 434; Fanciullo, 1997: 24), Sardinian (Schuchardt, 1874: 10; Molinu, 1992; Loporcaro, 1997b) or Corsican (Dalbera and Dalbera Stefanaggi, 2004), the phonological erosion of Latin final consonants manifested itself in a similar but slightly different way. There, word-final consonants provoking RS are still present in the lexicon as floating segments (Scheer, 2009: 62-64 for Corsican). They only surface before vowels whereas in preconsonantal positions they provoke RS, as shown in (23)[11], where the floating segment is underlined:

---

[11]   In Corsican consonantal strengthening driven by floating segments may also manifests itself as melodic strengthening (Scheer, 2009: 67-68).

(23) *Calabrian*   ˈkandəʈə na kanˈdzon/ kandə nna kanˈdzon 's/he sings a song'
      Sardinian   að̪aˈkaːnɛzɛ/a kˈkaːnɛzɛ/ 's/he has dogs'
      Corsican   að̪ ˈɛlla 'to her' / a kˈkolpi 'by hits'

In the case of Calabrian, Sardinian and Corsican then, the association line was deleted but the melody was not reached by erosion, yielding a floating segment, as illustrated in (24):

(24)   C V C V
                     |
                 a ð   *Sardinian/Corsican*
         (kand) a t   *Calabrian*

While in Sardinian and Calabrian the lexical item displaying the floating segment and the RS trigger may alternate freely, in Corsican this is also possible (*per me pe mme* 'for me'), although the floater generally appears before vowels, in a non-RS context.

In all the dialects considered so far, the cases in which erosion did not reach its logical end are exactly the ones in which the consonantal segments surfaced very often as geminates due to assimilation. This is hardly an accident, as geminates are strong segments that resist weakening.

The association line I argue to be present in the lexicon, linked to the final empty C in the representation of idiosyncratic triggers of RS in the Southern dialects and varieties, distinguishes this C position from a truly empty C position, as it predetermines its attachment to a C position in computation when the right circumstances are met.

From the representation proposed here for the triggers of idiosyncratic RS, it results that, as claimed in the previous proposals, the trigger of RS is encoded in the lexicon. However, the encoding of the RS trigger in the lexical shape of the words in question, which has not varied in diachrony as far as the template is concerned and which features an association line in the Southern dialects and varieties, makes the mark lexical but not diacritical. In addition, such a claim presents further advantages when compared to previous proposals. On the one hand, it allows both productive and idiosyncratic RS to be described as the result of an almost identical phonological representation. This is also a welcome result since both cases of RS yield the same phonological event, namely, the lengthening of the initial consonant of word$_2$ in *sandhi*. Moreover, it allows a cause-and-effect relationship to be established between the lexical mark and RS, whereas the claim that a group

of words causes RS because they are marked in the lexicon as RS triggers is a statement suffering from circularity that goes no further than a description of the empirical data observed[12].

With this phonological representation of the RS trigger in mind, we can move to next section where the phonological reasons of the blocking of RS are explored.

A caveat is in order, though, concerning the analysis of RS just presented. It must be stressed that such an analysis only depicts the representational side of the workings of RS. The procedural side of RS, important to reach a complete description of the phenomenon, is not addressed here.

5. *The phonological blocking of RS in Teraman*

This section presents two cases of RS blocking in Teraman Abruzzese that cannot be ascribed to syntactic influence on phonology. The first, where RS is blocked before definite articles, is discussed in 5.1. The second, where RS is blocked before indefinite articles is discussed in 5.2.

5.1. *Blocking of RS before definite articles*

This section examines how the phonological representations proposed for RS triggers may shed light on the blocking of RS before definite articles. The phonological representation of the RS triggers proposed includes an empty CV slot in word-final position and an association line which is not linked to any melody, as illustrated again in (25) for the sake of convenience:

(25)   C V C V
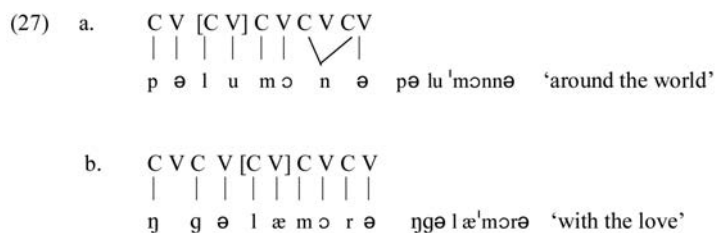 | | |
             p ə   'for'

The association line predetermines filling of the C position with the consonantal melody of a consonant-initial word, in phrasal domain. Generally this yields gemination (RS), as shown in (26):

---

[11] REPETTI (1991) proposes that a final empty mora is present in Standard Italian in lexical triggers, as well as in oxytonic words. This proposal does not account for the non-application of productive RS in the Southern varieties of Italian.

(26) a.   C V C V C V C V
             | | V | | |
             p ə k   æ s ə   pə kkæːsə   'by chance'

In order to account for the lack of application of RS before definite ar-
ticles, I propose that in the cases at hand the empty CV hosts such articles.
The full article and the elided article accompanied by the following unstres-
sed vowels cliticize to the triggers and are accommodated in the empty CVs.
Empty CVs as cliticization sites hosting articles at the beginning of words
are proposed by Lowenstamm (1999).

   The phonological representations of an RS trigger followed by a DP con-
taining a definite article and either a noun beginning with a consonant (a)
or a noun beginning with an unstressed vowel (b) are illustrated in Figure
(27). The empty CV at the end of the lexical trigger, which accommodates
the articles, is in square brackets[13]:

(27) a.   C V [C V] C V C V CV
              | | | | | | | V |
              p ə l u m ɔ n   ə   pə lu 'mɔnnə   'around the world'

      b.   C V C V [C V] C V C V
              | | | | | | | | | |
              ŋ g ə l æ ɔ r ə   ŋgəl æ'mɔrə   'with the love'

As seen in (27b), also the first vowel of vowel-initial words, if it is un-
stressed, occupies the empty CV, as a consequence of the deletion of the final
vowel of the article. If the first vowel of a vowel-initial word is stressed, howe-
ver, as head of the word-domain, it stays in place. Accordingly in such cases
the relic CV remains empty, its nucleus is governed in compliance with the
ECP, and RS is triggered as expected by the presence of the association line,
as illustrated in (28)[14]:

---

[13] In these and all the following examples abstraction is made from vowel length arising from tonic
lengthening as it is not relevant for our discussion.
[14] As pointed out by LOPORCARO (1997a: 44) for Romanesco, also in Teraman a couple of prepo-
sitions that are not RS trigger to start with (*di* 'of', *da* 'from'), cause doubling of the initial consonant
of a definite article following the pattern just described for the RS triggers, namely when the article
precedes a vowel-initial rizotonic word. At the present state of my research I have no explanation for
this and I can only resort to analogy.

(28)   C V C V [C V] C V C V C V
         | | | | | | | | |
         ŋ g ə   l æ s ə n ə   ŋgə ˈllæsənə 'with the donkey'

The word-final empty CV slot present in all lexical triggers of RS, as a remnant of a past stage of the language, is then responsible for the triggering and for the blocking of RS in Teraman Abruzzese. In the latter case, it hosts the definite article thus preventing RS from applying. In the former, the empty CV and its association line yield gemination of the first consonant of a following word, as expected from the phonological configuration. In the next section, where RS blocking before indefinite articles is discussed, more evidence as to the relevance of empty structure in the blocking of RS is presented.

5.2. *RS blocking before indefinite articles*

The blocking of RS before indefinite articles in Teraman must be set apart from the one taking place before definite articles. This is because, as opposed to the case illustrated in (28), where RS takes place if the article is not accommodated in the empty CV and leaves it empty, in the case of indefinite articles RS never takes place, not even when the article precedes a stressed vowel, as illustrated in (29d). The reason of the blocking of RS must be accordingly sought elsewhere[15].

(29)   a.   æ nu ˈkæːnə   'to a dog'
       b.   ndæ næ ˈɣættə   'like a cat'
       c.   ŋgə n æˈmiːkə   'with a friend'
       d.   pə n ˈɔmmənə   'for a man'

I propose that the reason why RS does not take place when the RS trigger precedes an indefinite article is that the indefinite articles *nu*, *næ*, from Latin UNU(M), UNA(M), are characterized by empty skeletal slots resulting from the incomplete deletion of the vowel /u/. The melody of the formerly stressed vowel /u/ was deleted in the process of phonological erosion that brought from Latin to Italian. The vocalic slot in the template, however,

---

[15] In Romanesco (LOPORCARO, 1997a: 44), on the other hand, the definite and indefinite articles show exactly the same pattern of blocking and triggering of RS so the analysis proposed in Section 5.1. may be uniformly applied.

stayed in place, as well as the preceding consonantal empty slot that was en-
tailed, as shown in (30):

(30)   a.   *Lat.*   C V C V   >   b.   *Ter.* C V C V
                      | | | | |
                      u n u   n u
                      (u n a)   (n æ)

Also Ledgeway (2009: 45) suggests that the underlying presence of /u/
in the indefinite articles is the reason behind the blocking of RS when inde-
finite articles in Neapolitan follow a RS trigger.

A representation like the one in (30b) accounts for the fact that RS is
uniformly blocked before indefinite articles, as is illustrated in detail next,
where RS is shown to be blocked also if the article precedes a stressed vowel.

In (31), the representations of the words involved in the cases of RS blo-
cking before indefinite articles are shown:

(31)   a.   C V C V   C V C V   C V C V
              | | | | | | | |
              æ   n æ   k æ s ə

       b.   C V C V   C V C V   C V C V C V
              | | | | | | | |
              æ   n   æ s ə n ə

When the words in (31), namely a RS trigger and an indefinite article
are inserted in phrasal domain, a configuration characterised by a sequence
of two empty CVs arises, the leftmost of which is also endowed with an asso-
ciation line linked to its consonantal position, as shown in (32):

(32)   a.   C V C V C V C V C V C V
              | | | | | | | |
              æ   n æ k æ s ə   'to a house'

       b.   C V C V C V C V C V C V
              | | | | | | | |
              æ   n æ s ə n ə   'to a donkey'

In such a configuration only the rightmost empty CV can be governed,
as shown in (33a), and may survive. The CV characterised by the association
line may not be supported, since it is followed by a governed empty nucleus
unable to entertain lateral relations, and disappears, as shown in (33b):

(33) a.
$$
\begin{array}{c}
\text{Gvt}\\
\text{C V C V C V C V C V C V}\\
\text{| | | | | | | |}\\
\text{æ   n æ k æ s ə}
\end{array}
$$

b.
$$
\begin{array}{c}
\text{Gvt}\\
\text{C V C V C V C V C V}\\
\text{| | | | | | |}\\
\text{æ   n æ k æ s ə}
\end{array}
$$

The representation in (33a), featuring just an empty CV stuck between two words, is identical to the representations in (21), which have been shown to trigger RS in Standard Italian but to be unable to trigger it in the Southern varieties and dialects. There, as seen in Section 4.2., only a CV endowed with an association line is able to trigger lengthening. Accordingly it is not surprising that RS does not take place in the case of indefinite articles in Teraman.

6. *Final remarks*

This contribution has discussed some cases of RS blocking in the Eastern Abruzzese dialect spoken in Teramo that cannot be explained by resorting to syntactic influence on phonology. A purely phonological explanation of the blocking has been provided, which crucially refers to some empty structure present in the representation of the words involved in RS, as a remnant of a past stage of the language. In order to avoid arbitrariness and *ad-hoc* proposals concerning empty structure, this contribution is couched in the CVCV framework, where the presence of empty structure is regulated by the Empty Category Principle. CVCV assumes a considerable gap between the audible string of sounds and the phonological representation behind it. The CVCV phonological representations, unless the surface string is a CVCV sequence, always but not arbitrarily include empty structure, through which, as extensively discussed and illustrated in Scheer (2004), a number of linguistic phenomena, data and processes can receive an insightful, motivated and elegant account.

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