Metrical prodosy: A template-and-constraint approach to phonological phrasing in Italian. Based on the poetry of Giuseppe Ungaretti and Eugenio Montale
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4 Prosodic Input Features: Templates and Text

4.0 Introduction

This chapter is dedicated to the Prosodic Input, i.e. to the prosodically distinctive features of words and structures. These features constitute the building blocks of the phrasal prosodic outputs as found in the verse data. My proposal is that the input consists of two sources of which one provides prosodic template features, and the other textual prosodic features. I take both sources to be indispensable in accounting for prosodic phrasing. In addition to this input, the grammar possesses a Generator (cf. Prince & Smolensky 1993, McCarthy & Prince 1993ab) whose function it is to generate sets of output candidates. Each output candidate is characterized by templatic features as well as textual features matched up in a particular way. The optimality theoretical constraint families PARSE and FILL evaluate these candidates, so that the candidate that best satisfies the constraints is selected as being optimal (see the schema under (1)). Since the constraints may conflict with each other, relative ranking of the constraints is crucial. The higher the hierarchical position of a constraint $a$, the stronger its need to be properly satisfied. Proposals regarding the ranking of constraints are deferred till chapter 5.

(1)

\[
\begin{array}{c}
\text{INPUT} \\
\vdots \\
\text{templates} \\
\text{text} \\
\text{GENERATOR} \\
\downarrow \\
(\text{free generation of output candidates}) \\
\text{EVALUATION} \\
\downarrow \\
(\text{ranked FILL/PARSE constraints}) \\
\text{OUTPUT} \\
(\text{optimally parsed text})
\end{array}
\]

The first part of this chapter deals with the prosodic template features, and the second part, with the textual prosodic features of Italian. Section 4.1 starts with an overview of the set of phonological phrase outputs found in the verse data. Three
of the ten \( \phi \) forms distinguished in chapter 3 will be considered to be part of the input. These three forms give rise to the default \( \phi \) template, the maximal \( \phi \) template and the minimal \( \phi \) template. Afterwards, the Italian syllable, foot and prosodic word templates will be discussed. The *templatic* prosodic features that are relevant in the context of phonological phrase formation involve structural well-formedness conditions imposed on these prosodic constituents. Section 4.2 deals with the *textual* prosodic features that are relevant in the context of phonological phrase formation. Lexical words (compounds included) and grammatical words will be argued to be associated with prosodic head features.

### 4.1 Prosodic Templates

In chapter 3 we saw that the phonological phrase in the poetry of Montale and Ungaretti is characterized by a set of recurring properties. Most evident is the alternation of phrasal stress, word stress, foot stress and zero stress. This alternation is binary in nature. This observation is captured in terms of the \( \phi \)-

\[ \text{Metricality Hypothesis:} \]

The phonological phrase is a metrically structured prosodic domain

In contrast to Nespor & Vogel's (1986) claim that prosodic trees are n-ary branching, the actual generalization is that all prosodic constituents up to the level of the phonological phrase are conditioned by one and the same principle of binarity:

\[ \text{(2) Binarity Principle} \]

Prosodic constituents from the syllable up to the phonological phrase are binary.

However, the parsed verse data show that binarity must not be interpreted in a strict sense. Focusing on the four most frequently occurring \( \phi \) forms (see table 3.44 in the conclusions of chapter 3), we observe the following structural patterns. The *Default \( \phi \) Form* is strictly binary at the prosodic word level, but at the phonological phrase level it is unary (cf. 4a). The three-positions counting *Simple \( \phi \) Form III* is unary at the phrase level, and loosely binary at the word level, in the sense that the word node dominates a foot node and a syllable node (cf. 4b), but not two foot nodes. The five-positions counting *Complex \( \phi \) Forms Iab* are strictly binary either at the word or phrase level, as well as loosely binary at the word level (cf. 4cd). And the six-positions counting *Complex \( \phi \) Form II* is strictly binary at the phrase level.

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1 See Principle 3 of the *Strict Layer Hypothesis* (chapter 2, section 2.1), regarding the n-ary branchingness claim.

but at the word level just one of the two words is strictly binary (cf. 4e). Notice that in contrast to the configurations presented in chapter 3, the foot and the prosodic word are both represented now on separate levels.

(4) a. Default φ Form
\[ \begin{array}{c}
\phi \\
\omega \\
\Sigma \\
\sigma 
\end{array} \]

b. Simple φ Form III
\[ \begin{array}{c}
\phi \\
\omega \\
\Sigma \\
\sigma 
\end{array} \]

c. Complex φ Form Ia
\[ \begin{array}{c}
\phi \\
\omega \\
\Sigma \\
\sigma 
\end{array} \]

d. Complex φ Form Ib
\[ \begin{array}{c}
\phi \\
\omega \\
\Sigma \\
\sigma 
\end{array} \]

e. Complex φ Form II
\[ \begin{array}{c}
\phi \\
\omega \\
\Sigma \\
\sigma 
\end{array} \]

Statistically, the phonological phrase forms identified in the verse data display a gradual scale of markedness. The forms in (4) belong to the core set of phrases; peripheral forms, in contrast, enclose one or two, or seven or eight metrical positions. Notice now that in accordance with the Binary Principle in (3), we expect the eight-position form to be the optimal structure. Nonetheless, as an output phrase, this φ form appears to be extremely marked. In other words, overall unarity at the one extreme, and overall binarity at the other, both give rise to highly marked structures:

(5) a. Simple φ Form I
\[ \begin{array}{c}
\phi \\
\omega \\
\Sigma \\
\sigma 
\end{array} \]

b. Complex φ Form IV
\[ \begin{array}{c}
\phi \\
\omega \\
\Sigma \\
\sigma 
\end{array} \]

Obviously, reducing prosodic structuring to one single principle of binarity overshoots the mark. In order to account for the core set of φ forms in (4), reference should be made to unarity, loose binarity as well as strict binarity. In addition to these three structural properties, the Italian verse data also give rise to structural ternarity. That is, two unstressed syllables may separate two stressed ones. This ternarity is observed at the foot level alone, however. No three-foot words or three-word phrases are found:
Assuming the Default \( \varphi \) Form to constitute the core phrase in the poetry of Ungaretti and Montale, I reformulate the Binarity Principle in (3) as the Core Binarity Principle:

(7) Core Binarity Principle
The core \( \varphi \) is unary at the \( \varphi \) level and strictly binary at the \( \omega \) and \( \Sigma \) level.

The statistics illustrate that the relative markedness of the other phrase forms gradually increases with the number of constituents displaying either unarity or binarity/ternarity. That is, when (a) unarity is not only observed at the \( \varphi \)-level, but also at the word or foot level, and (b) binarity is not only observed at the foot and word level, but also at the \( \varphi \)-level, we get relatively marked phrases.

I make the claim now that only three of the above distinguished \( \varphi \) forms constitute templates which are stored in the input. In addition to a Default \( \varphi \) template, there is a Minimal \( \varphi \) template and a Maximal \( \varphi \) template (the labeled square-bracket notation indicates that the templates are abstract formats, i.e., they are not yet realized by textual material):

(8) \( \text{Def}\varphi \) template \hspace{1cm} \( \text{Min}\varphi \) template \hspace{1cm} \( \text{Max}\varphi \) template
\[
\begin{bmatrix} \varphi \\ \omega \end{bmatrix} \hspace{1cm} \begin{bmatrix} \varphi \\ \omega \\ \omega \end{bmatrix} \hspace{1cm} \begin{bmatrix} \varphi \\ \omega \\ \omega \\ \omega \end{bmatrix}
\]
\[
\begin{bmatrix} \Sigma \\ \omega \end{bmatrix} \hspace{1cm} \begin{bmatrix} \Sigma \\ \omega \end{bmatrix} \hspace{1cm} \begin{bmatrix} \Sigma \\ \omega \\ \omega \end{bmatrix}
\]
\[
\begin{bmatrix} \omega \omega \omega \end{bmatrix} \hspace{1cm} \begin{bmatrix} \omega \omega \omega \omega \end{bmatrix} \hspace{1cm} \begin{bmatrix} \omega \omega \omega \omega \end{bmatrix}
\]

The \( \text{Def}\varphi \) template corresponds to the Default \( \varphi \) Form, the \( \text{Min}\varphi \) template to Simple \( \varphi \) Form III, and the \( \text{Max}\varphi \) template to Complex \( \varphi \) Form II. As we shall see in the following chapters, the remaining non-templatic \( \varphi \) forms result from the interaction between the textual input on the one hand, and the structural conditions represented by the above templates on the other. This interaction is controlled by the optimality theoretical constraint families PARSE and FILL. Before accounting for this interaction, we need to establish which are the structural conditions imposed on the Italian subphrasal prosodic constituents. I start with the syllable.

### 4.1.1 Prosodic Input Features: the Syllable

The Italian syllable has been studied by many scholars, most notably: Muljacic (1972), Basball (1974), Bertinetto (1981), Vogel (1977, 1982), Chierchia (1986), Marotta (1988), Bullock (1991), Calabrese & Romani (1991) and Bolognesi (1992,
1995). Language-universally, CV is considered to constitute the core syllable structure, and CVC its expansion (cf. Bell 1971, Kahn 1976, Bell & Hooper 1978). That is, every syllable has an Onset and a Nucleus, and possibly a Coda. In Italian too, Onset-Nucleus is the core syllable structure, and Onset-Nucleus-Coda its expansion. As above, the labeled square brackets indicate that we are dealing with formal positions, not yet realized with segments. I refer to Onset-Nucleus as to the minimal syllable template, and to Onset-Nucleus-Coda as to the maximal syllable template.

(9) Mina template

\[
\begin{array}{c|c|c}
\text{Onset} & \text{Nucleus} \\
\hline
[\text{io}] & [\text{n}] \\
\end{array}
\]

Maxer template

\[
\begin{array}{c|c|c|c}
\text{Onset} & \text{Nucleus} & \text{Coda} \\
\hline
[\text{io}] & [\text{n}] & [\text{le}] \\
\end{array}
\]

The Italian onset can be simple or expanded. The simple onset consists of either a single C or an Obstruent+Sonorant sequence, and the expanded onset consists of an s+Obstruent(+Sonorant), an Obstruent+Obstruent, or a Geminate Consonant (cf. Calabrese & Romani 1991, Bolognesi 1995). Simple and expanded onsets are exemplified in (10ab), respectively.

(10) a. Simple Onset: 
\[ \text{t} > \text{tavolo} \quad \text{‘table’} \]
\[ \text{m} > \text{mano} \quad \text{‘hand’} \]
\[ \text{pr} > \text{prato} \quad \text{‘meadow’} \]
\[ \text{kl} > \text{classe} \quad \text{‘class’} \]

b. Expanded Onset: 
\[ \text{str} > \text{strada} \quad \text{‘street’} \]
\[ \text{\lambda} > \text{gli} \quad \text{‘the’ (masc.sg.)} \]
\[ \text{ps} > \text{psicologo} \quad \text{‘psychologist’} \]

The Italian nucleus is simple. In addition, there is the short (rising) diphthong [w:], which behaves as a nucleus. By contrast, the other rising diphthong [ie] as well as the falling diphthongs [Vj] and [Vw] do not behave as a single nucleus (cf. Marotta 1988, Bolognesi 1995). Long vowels, furthermore, are not lexically distinctive in Italian (cf. Vogel 1982).

(11) a. Simple Nucleus: 
\[ \text{a} > \text{mano} \quad \text{‘hand’} \]

b. Rising Diphthong: 
\[ \text{i} > \text{riso} \quad \text{‘rice’} \]
\[ \text{\omega} > \text{uomo} \quad \text{‘man’} \]

The Italian coda is also simple. It can be realized by a sonorant, the first member of a geminate, or the left part of a consonant cluster.³

³ See Manzini & Voghera (1994) for a statistical analysis of Italian syllable structures. Their analysis is based on the LEXICO di frequenze dell’italiano parlato (LIP). CV is the most frequently occurring syllable structure, followed by CVC.

⁴ See Ito (1986) for general discussion on codas, and Bulloch (1993) and Bolognesi (1995) for discussion on Italian codas.
In contrast to the onset and nucleus position, the coda position is not necessarily realized in Italian. Moreover, it will be realized when the following onset position is not able to contain the relevant segment. Consider the phrases in (13). The /s/ of *stamani* occurs in the coda position of da, [das], and the first member of the geminate /h:/ of gli occurs in the coda position of se, [se].

(13) a. /da/ /stamani/ > [das]a[ra]a[ma]a[ni]a 'since this morning'
   b. /se/ /xai/ /dicI/ > [se]a[x]a[di]a[c]a 'if you tell me'

The Sonority Sequencing Principle (cf. Selkirk 1984b), or the constraint NoExpanded-Onset (cf. Bolognesi 1995), account for the phonotactic restrictions imposed on the onset. When the context does not provide a coda position, Italian has no mechanisms available other than realizing an expanded onset. The first consonant cannot be deleted, and there is no epenthetic vowel that can be inserted. Insertion of /i/, as in per istrada 'on the road', is not a productive mechanism anymore. In the case of word-initial geminates, degemination may occur (cf. Chierchia 1986).

In the output, the templatic syllable positions are not always properly realized. For instance, Italian has a considerable set of word-initial onsetless syllables. Nonetheless, onsetless syllables are phonologically undesirable elements, in Italian as well as in many other languages. Evidence of this undesirability is provided by: (a) phrasal syllabification, (b) synaloephe, and (c) stress properties.

Regarding (a), syllabification in Italian applies across words (cf. Hall 1964, Agard & Di Pietro 1965, Muljadi 1972, Bertinetto 1981, Chierchia 1986). If an onsetless word is immediately preceded by a CVC sequence, the final consonant of this sequence surfaces as the onset of the vowel-initial word. That is, a properly realized CV syllable is preferred over CVCV. The examples in (14) illustrate this point.

(14) a. /non/ /a/ /re/ > [no]a[a]a[ra]a 'not to you'
   b. /pet/ /amore/ > [pe]a[a]a[mo]a['re]a 'out of love'

Regarding the second argument (b), adjacent vowels in Italian are frequently subject to vowel deletion or vowel reduction (cf. Nespor 1990a, Kuhlman 1991). Recall from section 3.4.5, the phenomenon of synaloephe. Given the assumption that CV

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5 See Bolognesi (1995) for an account of coda realization in an optimality theoretical framework. The fact that expanded onsets trigger the selection of the determiner *le* instead of the consonant-closing determiner *li*, selected by simple as well as complex onsets, provides crucial evidence in favor of a constraint on onset realization.
constitutes the core syllable structure, these vowel deletion/reduction phenomena can be formally explained. That is, an input CV.V is realized as CV.

Regarding the final argument (c), stress properties and syllabification appear to be intricately related to one another. Section 3.4.5 showed that adjacent vowels are fully realized in order to obtain rhythmically well-formed outputs. That is, rhythmic alternation at the foot, word or phrase level is preferred over properly realized CV syllables. To exemplify the point, let me take a possessive pronoun like tuo 'your'. This pronoun can surface as monosyllabic or disyllabic. The stress degree with which the pronoun is realized is crucial regard to this: if unstressed, it surfaces as monosyllabic (cf. 15a), if stress-bearing, it surfaces as disyllabic (cf. 15b).

(15) a. il tuo piatto > il [tuΩ]o piatto 'your dish'
b. il piatto tuo > il [tuΩ]i[o] piatto 'YOUR dish'

Thus, the actual surface realization of lexically onsetless syllables is at least partially determined by suprasyllabic structure, like foot and word structure. The grammar (= the evaluating constraints) has to account for the fact that the templatic onset position is not always properly realized at the surface. In chapter 5, bare V outputs will be accounted for by the relative ranking of the constraint FILL-Onset.

4.1.2 Prosodic Input Features: the Foot

The foot in Italian is generally assumed to be a quantity insensitive left-headed constituent (cf. Vogel & Scalise 1982, Den Os & Kager 1986, Nespor & Vogel 1986, Nespor 1993, Helsloot 1995a). In addition, it is also generally assumed that a stressed syllable in Italian can be followed by one or two unstressed syllables (cf. Sesini 1939, Migliorini 1963, Camilli 1965, Muljačić 1969, 1972, Berriento 1981). I hypothesize therefore that the Italian foot is characterized by a minimally disyllabic template, and a maximally trisyllabic template. 7

(16) $\Sigma$ template $\Sigma$ template

$\Sigma \sigma \sigma' \sigma$

$\Sigma \sigma \sigma \sigma$

The Minimal foot template expresses the requirement that a foot minimally contains a head syllable followed by a dependent syllable. Although a debatable issue, there

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6 For general discussions on trochaic foot systems, see Hayes (1995), van der Hulst (1991), Kager (1993ab). An analysis of the Italian foot as quantity sensitive left-headed structure is found in Sluyters (1990). In the second part of this chapter, dedicated to the textual features of input words, I shall briefly consider the relative quantity sensitivity of main stress location in Italian.

7. Headedness of constituents is indicated by means of vertical dominancy, and dependency by diagonal dominancy. This notation is reminiscent to the head-dependent notation formalized in Dependency Phonology (cf. Anderson & Jones 1974, Anderson & Ewen 1987).
are a number of reasons which argue in favor of an additional ternary foot template.8

Two durational effects have been reported in the literature which show that disyllabic surface feet crucially differ from trisyllabic surface feet.9 As mentioned earlier, vowel length is not lexically distinctive in Italian. But the vowel of a non-final stressed open syllable is lengthened in isolated pronunciation (cf. Mulja 1972, Fava & Magno Caldognetto 1976, Bertinetto 1981, Vogel 1982, Nespor & Vogel 1986). This lengthening appears to occur in stressed open penults, but not in stressed open antepenults (cf. Castellani 1980, Sulyters 1990). Thus, áma ‘he loves’ – ámamo ‘they love’.10

A similar durational effect is observed with respect to consonant lengthening (Raddoppiamento Sintattico). Marotta (1986) found that a word-final stressed syllable followed by two unstressed syllables (CV#CV.CV) does not cause lengthening of the initial consonant of the first unstressed syllable (*CV#C.V.CV). By contrast, a word-final stressed syllable followed by one unstressed syllable causes consonant lengthening. Thus, the [p] in città pulitissima ‘very clean city’ is short, while it is lengthened in città pulita ‘clean city’.11

Another argument favoring a trisyllabic foot template, in addition to a disyllabic one, is provided by the fact that the second dependent syllable will always be fully realized. Moreover, the relevant syllable can be heavy (CVC). This argument bears on the other debatable issue, i.e. the assumed quantity insensitivity of the Italian foot. In Italian, not only the head syllable of the foot, but also the first and/or the second dependent syllable can be heavy. Words like mándola ‘almond’ and polízza ‘policy’ are often mentioned in this context (cf. Delmonte 1981, Lepschy & Lepschy 1981, Den Os & Kager 1986). That is, main stress falls on the antepenultimate syllable in these words, although the penult is heavy. Of interest are also the loanwords and proper names in (17). These words were originally pronounced in Italian with stress on the final syllable. Nowadays, the stress is often realized on the antepenultimate syllable:

(17) a. CVC.CV.CVC : festival
    b. CV.CV.CVC : Arafat
    c. CV.CVC.CV : Bénétton
    d. CVC.CVC.CVC : performance

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8 See Halle & Vergnaud (1987), Dresher & Lahiri (1991) and Rice (1992) for ternary foot structures in other languages than Italian. Recent proposals in which feet are argued to be exclusively binary branching are found in Kager (1989, 1993b), Hewitt (1992), McCarthy & Prince (1993a) and Hayes (1995).

9 But see Prince (1990) for arguments in favor of a theory in which length in penults and non-length in antepenults are both derived from one binary foot.

10 Measurements reported by Bertinetto (1976) and Marotta (1985) seem to confirm this durational effect.

11 Presumably, these durational differences cannot be attributed to the relevant foot shapes alone; word stress and/or phrasal stress are also involved.
Such stress shifts are hard to explain from within a quantity sensitive foot system. The examples (17c) and (17d) show that both the dependent syllables can be closed. Word-internally, we also find trisyllabic (dependent) feet with closed dependent syllables. Some examples are given below.

(18) a. CVC.CVC.CV.CVC.CV : raddoppiaménto
    b. CVC.CVC.CV.CVC.CV : sénésbiliménne
    c. CV.CVC.CVC.CV.CV : mánngnoegglié

A final argument in favor of a Max template in addition to a Min template is provided by the specific set of phrases, distinguished in section 3.4.5, in which two adjacent unstressed vowels do not undergo synaloepe. Two examples are repeated in (19).

(19) affondámn morno
    E quandó, e lón

The two unstressed syllables are both fully realized in order to create sufficient distance between the two phrasal stresses. Although the relevant syllables will not be dominated by one and the same foot constituent, the fact that two, instead of one, intermediate syllables are required argues in favor of a ternary Max template.

4.1.3 Prosodic Input Features: the Prosodic Word

The prosodic word in Italian is a right-headed constituent, i.e., the rightmost foot of a prosodic word is the head foot of the word (cf. Nespor & Vogel 1986). Like the syllable and the foot, I define the Italian prosodic word in terms of a minimal template and a maximal template. The Min template contains one foot and the Max template two feet:

(20) Min template       Max template
    $\left[ \begin{array}{c}
    \| \omega \\
    \| \Sigma
    \end{array} \right]$       $\left[ \begin{array}{cc}
    \| \omega \\
    \| \Sigma \\
    \| \Sigma
    \end{array} \right$

Let us first discuss the Min template. A minimality condition on the prosodic word exists in a variety of languages. Although not necessarily so, a frequent property of languages with such a condition is the presence of a set of (mainly) functional or cliticizable elements which do not conform to this minimality condition. That is, mino requirements typically apply to lexical words but not grammatical words (cf. Golston 1991, Selkirk 1995b). In Italian too a mino

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condition is imposed on lexical words alone. Many Italian grammatical elements are prosodically smaller than the Minro template. Italian lexical words that are monosyllabic thus call for special treatment. That is, these monosyllabic words are potential violators of constraints involving the Minro template. Chapter 8 provides a formal account of lexical monosyllables occurring in a phrasal context.

The number of Italian monosyllabic lexical words is rather small, however. Furthermore, monosyllabic lexical words, in contrast to lexical penults or antepenults, may trigger a variety of external sandhi phenomena. As shown in chapter 3, monosyllabic lexical words (like all stress-final words) are often associated with clash-resolving phenomena like Vowel Doubling (VD), Raddoppiamento Sintattico (RS) or Pitch Jumping (PJ), and monosyllabic lexical words are particularly susceptible to Destressing (DS). These phenomena are illustrated in (21a) with respect to the Noun-Adjective sequence re nudi 'naked kings'. In (21b), an almost homophonous Determiner-Noun sequence is given: le nude 'the naked (fem.pl.)'. In contrast to the monosyllabic noun re, the determiner le does not trigger any of the above phenomena. A detailed analysis of these phenomena is deferred until chapter 8.

(21) a. re nudi b. le nude
RS: re nüdi RS: *le núde
VD: r-e nüdi VD: *le-e núde
PJ: H L \[\text{le núde}\]
DS: re nüdi DS: \[\text{-----}\]

Although the output of the phenomena does not result in the disyllabic trochee characterizing the Minro template, the fact that monosyllabic lexical words trigger clash-resolving phenomena in order to create enough distance between two stressed syllables argues in favor of an underlying a template that is minimally defined as a well-formed disyllabic foot.

The dichotomy between lexical monosyllables and external sandhi phenomena on the one hand, and grammatical monosyllables and absence of such phenomena on the other, obviously correlates with the dichotomy between lexical words and stress on the one hand, and grammatical words and absence of stress on the other. In the

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13 Monosyllabic nouns are: re 'king', gra 'cane', re 'sea', di 'day', bar 'bar', tram 'train', aur 'aur', gas 'gas', et 'east', sud 'south', nord 'north'. Most of these nouns are loanwords. As in many languages, musical notes and certain letters of the alphabet also belong to the set of monosyllabic nouns. Monosyllabic pronouns may function as head of an NP: tu 'you', me 'me (dat./acc.)', te 'you (dat./acc.)', sé 'themselves'. Monosyllabic verb forms may function as head of a VP: va 'go (3sg. ind.)', fa 'make (3sg. ind.)', sa 'know (3sg. ind.)', so 'know (1sg. ind.)', da 'give (3sg. ind.)', di 'give (3sg. ind.)'. Monosyllabic adverbs are: qui 'here', qua 'there', li 'there', fa 'ago', gia 'already'. Monosyllabic adjectives are: blu 'blue', tre 'three'.

14 Raddoppiamento Sintattico (RS) is the only phenomenon that characterizes also a set of function words (determiners excluded). As will be discussed in section 4.3.2, RS triggered by function words and RS triggered by lexical words must be treated as two different phenomena.
next section, I shall propose therefore that lexical monosyllables only are
underlyingly specified for \( \omega \)-headship. Grammatical monosyllables lack this \( \omega \)-head feature. In short, presence \( \nu \nu \) absence of external sandhi phenomena is
straightforwardly accounted for in a theoretical framework in which lexical and
grammatical monosyllables are distinguished by means of prosodic feature
specifications.

With respect to the Maxeo template, it should be noted that prosodic maximality
conditions on the prosodic word have attracted virtually no attention in the
literature.\(^{15}\) One reason is the following. Although the observed non-isomorphism
between morphological structure on the one hand, and phonological structure on
the other, lies at the root of the introduction of autonomous prosodic (or metrical)
constituents (cf. Liberman & Prince 1977, Selkirk 1978), it is often assumed that this
non-isomorphism is determined by morphological constituency alone. For example,
Nespor & Vogel (1986) consider the interaction between morphology and prosody
as being unidirectional in the sense that morphological structure is mapped onto
prosodic structure (cf. Nespor & Vogel 1986:109). Thus, a morphological
compound may give rise to two prosodic words (cf. Booij 1983, McCarthy & Prince
1986, Nespor & Vogel 1986), or prefixes may constitute a prosodic word on their
own (Nespor & Vogel 1986). The possibility that prosodic structure and
morphological structure are related in a bidirectional fashion has received less
attention.\(^{16}\) Nespor & Vogel (1986:110) explicitly exclude the option that prosodic
words may enclose more than one terminal element of a syntactic tree. In line with
Booij’s (1983, 1995) analysis of Dutch, I shall argue instead that Italian prosodic
words must be allowed to enclose more than one terminal element. Chapter 5
provides evidence on the basis of syllabification and foot formation phenomena.

The prosodic output of certain derived words argues in favor of the Maxeo
template. Derived words in Italian may give rise to metrical outputs of more than
two feet. In Helsloot (1993), I showed that such words surface as a prosodic
compound, i.e., as a sequence of two prosodic words: in addition to a lexical main
stress, there is a second syllable with \textit{surface} main stress.\(^ {17}\) The former occurs close
to the right edge, and the latter close to the left edge of the word domain. These

\(^{15}\) But see, for instance, Hewitt (1992), Helsloot (1993) and Kager (1994a).

\(^{16}\) See Finkel’s (1989), however, for a bidirectional account between morphology and phonology. Morpho-prosodic
alignment constraints like those proposed by McCarthy & Prince (1993b) are also intrinsically bidirectional in
nature. In neither of these two works, however, maximality requirements on the prosodic word are taken into
account.

\(^{17}\) The involved words consisted of three feet each: \( /\text{c\text{c\text{c}}}/. \) On the basis of a perception test it was established
that the informants systematically perceived a second main word stress in these words: \( /\text{c\text{c\text{c}}} \text{c\text{c\text{c}}}/. \) Since the head
syllable of the intermediate foot was not perceived as stressed, the main stress close to the left edge of the word
domain could not be interpreted as being just a foot stress. Duration as phonetic correlate proved not to be as
important as one might expect considering the role generally attributed to \textit{Vowel Lengthening} as criterion of main
word stress in Italian. Consequently, the hypothesis was made that fundamental frequency and/or intensity
functioned as potential information-bearers of this second main word stress. Additional phonetic measurements are
required, however, to verify this hypothesis.
prosodic compounds typically consist of a stem that is surrounded by more than one affix. Underived words, by contrast, never exceed the Maxσ template: they maximally contain one main stress and one secondary stress (cf. Muljačić 1969, 1972, Vogel & Scalise 1982). (22) illustrates derived words which are realized at the surface with two main stresses. Both the initial foot and the final foot must be considered to constitute the head of a prosodic word constituent.

\[
\begin{array}{ll}
\text{Lexical Main Stress} & \text{Surface Main Stresses} \\
\text{a. immobilità} > ([immo]σ)α ([bili]σ[ča]σ)α & \text{"immobility"} \\
\text{b. irrequiétudine} > ([irre]σ)α ([quie]σ[čudine]σ)α & \text{"restlessness"} \\
\text{c. inconsapevolézza} > ([in]σ[čonsa]σ)α ([pevo]σ[čézza]σ)α & \text{"unconsciousness"} \\
\text{d. accomagnerà} > ([accom]σ)α ([pagnec]σ[čá]σ)α & \text{"accompany (3SG.FUT)"} \\
\text{e. insensibilmente} > ([insen]σ)α ([sibil]σ[čménc]σ)α & \text{"imperceptibly"} \\
\end{array}
\]

The right-headedness of the Maxσ template as well as the two-foot maximum formalize the observed patterns.

4.1.4 Summary

On the basis of the analysis of the poetry of Ungaretti and Montale, I defined a set of phonological phrase templates. These phrase templates reflect the structural conditions imposed on the Italian syllable, foot and prosodic word. Each constituent is characterized by a minimal as well as a maximal template:

\[
\begin{array}{ll}
\text{Minσ template} & \text{Maxσ template} \\
M\text{In}σ \text{template} & M\text{ax}σ \text{template} \\
\end{array}
\]