PROSODIC MORPHOLOGY IN SPANISH:
CONSTRAINT INTERACTION IN WORD FORMATION

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
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By

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* * * * *

The Ohio State University
1998

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1998
ABSTRACT

This dissertation explores a domain of Spanish morphology that is phonologically-conditioned. Dominant phonological constraints may cause word-formation processes to depart from the unmarked concatenative pattern. I examine a set of marginal word-formation processes where different alternatives to concatenative morphology are exploited in order to generate new lexical forms. The language game Jerigonza, word-blending, truncatory morphology and playful-wording are all processes whereby an alternate lexical item is created without morpheme concatenation.

On the basis that the new output form (NWO) reproduces derived properties of the source form (SF), such as syllable and foot structures, it is argued that SF is not an abstract input form but a fully-fledged output form. This approach is in line with recent proposals within Optimality and Correspondence Theories claiming that certain processes obey a correspondence relationship whereby two output forms are forced to retain a degree of resemblance that depends on the ranking of faithfulness constraints with respect to other active constraints. Consistent with the findings within Prosodic Morphology Theory, it is also shown that phonology and morphology interact through constraints that are defined in terms of phonological and morphological units. Alignment between the edges of these constituents is often a factor that determines NWO.
In word-blending, the sequential order of morphemes is broken when one of the SF's overlaps upon the other one. In order to satisfy an alignment condition, NwO must contain some segments with multiple correspondents in SF, which do not have to be featurally identical. In Jerigonza, the contiguity of SF is altered by the intrusion of epenthetic syllables that help NwO meet a prosodic configuration where the correspondent of every syllable in SF heads a disyllabic foot. In truncatory morphology, SF is minimized in favor of prosodic unmarkedness that is reflected at the prosodic-word level but also at the foot and syllable levels since NwO corresponds to a single binary foot projected on minimally-marked syllables. In playful-wording, SF is lengthened at its right edge through the introduction of an epenthetic syllable that helps avoid a word-final main-stressed foot.
A Cecilia, Luis y Carmen
ACKNOWLEDGMENTS

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I thank Dieter Wanner for his participation on my exam committee and Josep Fontana for his teachings and friendship. I thank all the people at the Spanish Department who offered me their friendship and support throughout my five years at Ohio State.

Lastly but not less importantly, I want to express my gratitude to my parents, Cecilia and Luis, and to my beloved friend Carmen for they have brought inspiration to my life and joy to my heart. Thanks to my family and, above all, thanks to God.
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1.0 Introduction

This dissertation explores a domain of Spanish morphology where, due to the demands of dominant phonological constraints, morphemes are forced to combine in ways that depart from the unmarked concatenative fashion. In order to support the claim that not all Spanish morphology is concatenative, several word formation processes in which morphology and phonology interact are examined in detail. Beyond the core grammar of the language, there exist processes such as the language game JERIGONZA, WORD-BLENDING, TRUNCATION and PLAYFUL-WORDS, which constitute various alternatives to morpheme concatenation. These alternatives are morpheme overlapping, discontinuous morphemes and templatic forms. The current work is intended as a contribution to improve our understanding of Spanish morphology as well as a contribution to two developing lines of research in theoretical linguistics. One of them, within the frameworks of Prosodic Morphology and Optimality Theory, concerns the morphology/phonology interface, which has been formalized in terms of alignment constraints that demand the matching of the edges of certain morphological and prosodic constituents. The other one, within Correspondence Theory, concerns the proposal that, in addition to the usual input-to-output derivations, languages may also exploit output-to-
output derivations in order to generate new forms from fully-fledged output forms. It is claimed that Jerigonza, word-blending, truncation and playful-words are non-concatenative processes that operate on an output form to generate a new output form.

1.1 Spanish concatenative and non-concatenative morphology

Traditional studies on Spanish morphology tend to view Spanish word formation as exclusively concatenative. From that viewpoint, morphemes are linked to one another in a linear fashion, one right next to the other. As a result of this, the generation of new words is accomplished through morpheme concatenation, whereby a lexical morpheme may combine with an affix (e.g. a prefix, as in 1a; or a suffix, as in 1b), or lexical morphemes may combine with one another (as in 1c).\(^1\)

(1) a. **Prefixation**: [prefix + lexical morpheme]

\[
\begin{array}{ll}
\text{des} + \text{honra} & \rightarrow \text{deshonra} \quad \text{‘dishonor’} \\
\text{pre} + \text{ver} & \rightarrow \text{prever} \quad \text{‘foresee’}
\end{array}
\]

b. **Suffixation**: [lexical morpheme + suffix]

\[
\begin{array}{ll}
\text{localiz(ar)} + \text{able} & \rightarrow \text{localizable} \quad \text{‘locatable, placeable’} \\
\text{compet(ir)} + \text{idor} & \rightarrow \text{competidor} \quad \text{‘competitor’}
\end{array}
\]

c. **Compounding**: [lexical morpheme + lexical morpheme]

\[
\begin{array}{ll}
\text{casa} + \text{tienda} & \rightarrow \text{casatienda} \quad \text{‘shop house’} \\
\text{balón} + \text{cesto} & \rightarrow \text{baloncesto} \quad \text{‘basketball’}
\end{array}
\]

\(^1\) Data from Lang (1990); glosses are mine. Examples will be presented in Spanish orthography except when clarity requires a phonemic transcription.
The outputs of these operations may undergo subsequent combinations with other morphemes yielding even more complex forms. But regardless of the number of morphemes a form may be made of, in that kind of processes, morphologically-complex words are made up of chains of morphemes, where one morpheme starts where the preceding one ends. Concatenative processes are not infrequent in the languages of the world. This type of morphology is, in fact, the unmarked way to combine morphemes. It is the most common type of morphology languages use to derive new words and also to generate inflected forms.

Much morphological research in Spanish has focused on word-formation processes such as derivation and compounding, for which a concatenative approach results compatible. Lesser attention has been paid to phenomena that fall beyond the core grammar of the language but which, when carefully inspected, seem to actually defy the view of Spanish morphology as the concatenation of morphemes alone. Due to the marginal status of these processes, it may appear that Spanish morphology is exclusively concatenative when, in fact, that is not the case. In addition to concatenative morphology, Spanish also has word-formation processes which yield forms where morphemes do not appear juxtaposed. It will be demonstrated that Jerigonza, Word-blending, Truncation and Playful-words are non-core grammar processes which constitute instances of non-concatenative morphology.

Pieces of evidence for non-concatenative morphology in Spanish can be found even in derivational and inflectional processes that are part of the core morphology. Harris (1980) is the first analysis proposed for Spanish that tackles morpho-phonological phenomena from a multilinear perspective. In that work, Harris proposes an
autosegmental account of Spanish plurals that takes into consideration not only the
segmental but the supra-segmental level as well; the latter as a plane where certain
positions can exist independently from segmental units. One advantage of the
Autosegmental Framework is that it not only allows the possibility of morpheme
concatenation, but it also makes available the alternative of morpheme overlapping. By
applying the autosegmental approach to Spanish plurals, Harris (1980) is able to shed
light on odd forms such as *lunes* ‘Mondays’, *martes* ‘Tuesdays’, *análisis* ‘analyses’,
crisis ‘crisis’, *dosis* 'doses', etc., where there is no apparent plural morpheme. The claim
is that the plural morpheme overlaps upon the last two segments of the stems of this type
of words. This is illustrated in (2) where the symbol $\varphi$ stands for a morpheme.

\begin{align*}
(2) \text{Morpheme overlapping in -$V$s Spanish plural forms:} \\
\text{\hspace{1cm}} 'Monday' & \quad \varphi & \varphi & 'plural' & \text{\hspace{1cm}} 'crisis' & \quad \varphi & \varphi & 'plural' & \text{\hspace{1cm}} 'dose' & \quad \varphi & \varphi & 'plural' \\
C & V & C & V & C & \text{\hspace{1cm}} C & C & V & C & V & C & \text{\hspace{1cm}} C & V & C & V & C \\
\text{l} & \text{u} & \text{n} & \text{e} & \text{s} & \text{\hspace{1cm}} \text{c} & \text{r} & \text{i} & \text{s} & \text{i} & \text{s} & \text{\hspace{1cm}} \text{d} & \text{o} & \text{s} & \text{i} & \text{s} \\
\end{align*}

The segments -$V$s at the end of these forms are ambimorphemic because they are
not only part of their corresponding stems but they also serve to realize the plural
morpheme. This kind of plural form is then a case of morpheme overlapping.

Prieto (1992a) adopts insightful contributions made by McCarthy and Prince
(1986) within the theory of Prosodic Morphology and applies them to one of the two
types of truncation processes that exist in Spanish. In Type-A hypocoristics, most
segments from the first two syllables of the source form are preserved in the truncated
form. Prieto finds that Spanish truncated forms comply with an invariant prosodic configuration: a syllabic trochee\(^2\), whose second syllable is required to be light whenever the peninitial syllable of the input word contains a diphthong (e.g. dání < danjél 'Daniel'). Otherwise, the second syllable of the hypocoristic is optionally light (e.g. fénan ~ fërna < fernándo 'Fernando'). To satisfy this template, hypocoristics must be equivalent to a prosodic word (PWd) that is built on a single disyllabic foot (F).

\[(3) \quad \text{Prosodic structure of Spanish hypocoristics: (Type A)}\]

\[
\begin{array}{c}
\text{PWd} \\
F \\
\sigma \\
\sigma \\
f \quad e \quad r \quad n \quad a \quad n
\end{array} \quad \begin{array}{c}
\text{PWd} \\
F \\
\sigma \\
\sigma \\
f \quad e \quad r \quad n \quad a
\end{array}
\]

Lipski (1995) studies another type of truncated forms. Type-B hypocoristics preserve segments from the final syllables of the source form (e.g. néto < ernésto 'Ernesto (a boy's name)', zándo < lisándro 'Lisandro (a boy's name)'. Lipski also identifies a syllabic-trochee template but with a strong tendency to simplify not only diphthongs but complex onsets and syllable codas as well. Except for a nasal segment parsed as the coda of the first syllable of the template, all coda segments are lost. This tendency to simplify marked syllable structure favors open syllables of the unmarked CV-type.

\(^2\) A syllabic trochee is a binary foot whose prominent syllable (s) precedes a less prominent one (w). That is, \(F = (s \ w)\) or, using an alternate notation, \(F = (\sigma \, \sigma')\).
Colina (1996) uses a constraint-based approach to reanalyze the data presented by Prieto (1992a). She manages to rid the analysis of the light-syllable condition that applies obligatorily to those forms whose peninitial syllable contains a diphthong but only optionally to all other forms. The obligatory application of this condition is interpreted as an effect of the high rank of the well-formedness constraints *COMPLEXN and NOCODA, which dominate the correspondence constraint MAX.

\[\text{(5) *COMPLEXN: No Complex Syllable Nuclei} \]

Syllable nuclei may not be bisegmental.

\[\text{NOCODA: No Syllable Codas} \]

Syllables may not have codas.

\[\text{MAX: Maximization} \]

Every element in the base has a correspondent in the truncated form.

The optional application of the same condition is derived through constraint unspecification. For this purpose, Colina allows the constraints NOCODA and MAX to be unspecified with respect to one another. If the ranking of these constraints is unspecified, the optimal candidate may or may not have a closed second syllable depending on whether speakers use the ranking NOCODA >> MAX or vice versa. According to Colina's
analysis, truncation is a case of ‘emergence of the unmarked’, whereby the effects of a
dominated constraint (NoCoDa) become visible only when the dominant constraints (e.g.
IO-faithfulness constraints) are not relevant. These issues are discussed in detail in
Chapter 4.

Prieto (1992b) uses the Theory of Prosodic-Morphology to analyze Spanish
diminutives. This strategy enables her to propose an analysis of greater explanatory
power than previous linear analyses devoted to the topic because it takes into account an
important prosodic constraint. She claims that the reason why certain diminutive forms
exhibit an epenthetic vowel /e/ (e.g. *pane*cito ‘little bread’ < *pan* ‘bread’) is because there
is a minimal word (MnWd) condition that, when activated, forces output forms to contain
at least two syllabic trochees. (Epenthetic segments appear underlined)

(6) MnWd constraint in Diminutive Formation:  (Prieto, 1992b)

Crowhurst (1992a,b) revisits Spanish diminutive formation focusing on Mexican
dialects. She also proposes a prosodic condition to account for diminutive and
augmentative forms: the base to which the diminutive/augmentative morpheme adjoins
must correspond to a disyllabic foot, $F = (\sigma \sigma)$. Under this approach, epenthesis is also
triggered by the need to satisfy a template, but unlike Prieto's analysis, the template does not hold of the output form but of the base for diminutivization.

(7) **Disyllabic template in Diminutive Formation:** (Crowhurst, 1992a,b)

Although different, the proposals made by Prieto, Crowhurst, Lipski and Colina that have been reviewed above coincide in identifying some kind of prosodic template that determines the shape of the output form. According to these analyses, Spanish hypocoristics and diminutives are cases of template-driven morphology. But a more general conclusion these authors independently reach is that the effect of prosodic conditions is not to yield an infinite number of arbitrary forms. Rather, prosodic conditions demand configurations that coincide with prosodic categories. Therefore, these constraints are susceptible to being formalized in a very precise way through the use of the limited number of existing prosodic units.

Such work has certainly opened a new horizon of research in the field of Spanish morpho-phonology. No less important is the contribution made by Pharies (1986, 1987) on the topics of blends (e.g. *cacaína* 'filthy cocaine' < *caca* 'excrement' + *cocaína* 'cocaine') and playful-words (e.g. *guasángara* < *guasánga* 'fuss'), which are phonologically-conditioned as well. Although the data he reports has not received much
attention, Pharies’ work is an outstanding example of exhaustive lexicological research. Most of the blends and playful-words I analyze come from this source.

In Chapter 2, I study a language game. Despite its being so widespread in the Spanish speaking world, no research has been devoted to the puzzling facts exhibited by Jerigonza, a coded speech form that young speakers use when they want to ensure secret communication. In Jerigonza, Spanish words are 'disguised' through the introduction of epenthetic syllables that disrupt the contiguity of the source form (e.g. *capasapa* < *casa* 'house'). I claim that these epenthetic syllables help meet a prosodic configuration where the correspondent of every syllable in the source form heads a disyllabic foot. For this to be possible, the output form must contain as many epenthetic syllables as there are syllables in the source form. The result is a homogeneous prosodic structure with optimal syllable parsing: every syllable in the output is parsed under a disyllabic foot. This prosodic strategy is responsible for the camouflage effect exhibited by infixing language games like Jerigonza.

(8) Syllable epenthesis in Jerigonza:

```
PWd
|   
| F
\sigma / \sigma
\sigma / \sigma
\sigma / \sigma
```

In Chapter 3, I study Spanish blends. I argue that blending is a word-formation process whereby two lexical morphemes combine under a ban on prosodic-word
recursion. Given that the category Morphological Word must be licensed by the category Prosodic Word, the two formatives of a blend must array in such a way that they can maximize the use of available prosodic-word edges. This forces some segments in the blend to act as correspondents of more than one segment in the source form. Blends are an instance of morpheme overlapping whereby two morphemes may occur simultaneously rather than sequentially. Ambimorphic segments help maintain a closer identity between the blend and its source forms.

(9) Word-blending:

\[
\begin{array}{ccc}
\text{PWd} & \text{PWd} & \text{PWd} \\
\sigma & \sigma & \sigma \\
c & a & c & a & c & o & c & a & i & n & a & c & a & c & a & i & n & a \\
\end{array}
\rightarrow
\begin{array}{ccc}
\sigma & \sigma & \sigma & \sigma \\
c & a & c & a & i & n & a \\
\end{array}
\]

The topic of Spanish truncation has not been exhausted yet. Although it is the most studied phonologically-driven word-formation process of the language (Prieto 1992, Lipski 1995 and Colina 1996), none of these accounts has explained why for some truncated forms the foot structure of the input is a determining factor (e.g. [(mén.≠a)] < [kle.(mén.sja)] 'Clemencia'), whereas for others, it is completely irrelevant (e.g. [(dó.lo)] < [do.(ló.res)] 'Dolores'). In Chapter 4, I argue that there exist two main types of truncation processes in Spanish. One of them is governed by the faithfulness constraint HEAD(PWd)MAX, whose role is to ensure the preservation of those elements parsed under the head of the PWd. The other one simply obeys an ANCHORing constraint that determines which part of the input should be preserved in the output.
One of the templates identified by Pharies (1986) for Spanish playful-words features a dactyl\(^3\) that sits at the right margin of the word (e.g. *guasángara* 'fuss' < *guasánga* 'noise'). In order to satisfy this template, an epenthetic syllable is added. In Chapter 5, I argue that the epenthetic syllable that yields this dactylic template arises from the need to satisfy a prosodic constraint that militates against word-final feet. An epenthetic syllable is needed in order to move the word-final foot away from the right edge of the PWd. The option of shifting the foot back one syllable without resorting to epenthesis is ruled out by a condition requiring that the head of the PWd of the playful-word be identical to the head of the PWd of the input.

(10) **Dactylic template in playful-words:**

\[
\begin{array}{c}
\text{PWd} \\
\sigma \quad \sigma \quad \sigma \\
\text{F} \\
g u a s á n g a
\end{array} \quad \rightarrow \quad
\begin{array}{c}
\text{PWd} \\
\sigma \quad \sigma \\
\text{F} \\
g u a s á n g a \quad r
\end{array}
\]

It is these gaps in Spanish morpho-phonology that this dissertation intends to bridge. Under the proposals made here, the apparently unrelated processes of Jerigonza, word-blending, truncation and playful-words are brought together as alternatives to concatenative morphology: discontinuous morphemes, morpheme overlapping and templatic forms.

\(^3\) A final dactyl is formed when a syllabic trochee is followed by a syllable that is not parsed by a foot but directly parsed by the prosodic word: \((\sigma\sigma)\sigma\)\(_{\text{PWd}}\)
1.2 Alternatives to concatenative morphology

I propose that alongside the most productive word-formation processes of Spanish, which tend to create new forms concatenatively, there is a set of marginal morphological processes that depart from that pattern. The following data further illustrate the processes to be studied in this dissertation.

(11) a. **Jerigonza:** (Chapter 2)

<table>
<thead>
<tr>
<th>Spanish</th>
<th>Jerigonza</th>
</tr>
</thead>
<tbody>
<tr>
<td>comida</td>
<td>copomipidapa</td>
</tr>
<tr>
<td>‘food’</td>
<td>‘food’</td>
</tr>
<tr>
<td>salida</td>
<td>sapalipidapa</td>
</tr>
<tr>
<td>‘exit’</td>
<td>‘exit’</td>
</tr>
</tbody>
</table>

b. **Word-blending:** (Chapter 3)

<table>
<thead>
<tr>
<th>Spanish</th>
<th>Word-blending</th>
</tr>
</thead>
<tbody>
<tr>
<td>sucio</td>
<td>suciedad</td>
</tr>
<tr>
<td>‘dirty’</td>
<td>‘dirty society’</td>
</tr>
<tr>
<td>dedo</td>
<td>dedocracia</td>
</tr>
<tr>
<td>‘finger’</td>
<td>‘arbitrary system of election by pointing with the finger’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spanish</th>
<th>Word-blending</th>
</tr>
</thead>
<tbody>
<tr>
<td>sociedad</td>
<td>sociedad</td>
</tr>
<tr>
<td>‘society’</td>
<td>‘society’</td>
</tr>
<tr>
<td>democracia</td>
<td>democracia</td>
</tr>
<tr>
<td>‘democracy’</td>
<td>‘democracy’</td>
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</table>

<table>
<thead>
<tr>
<th>Spanish</th>
<th>Word-blending</th>
</tr>
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<tbody>
<tr>
<td>javier</td>
<td>Javi</td>
</tr>
<tr>
<td>‘Xavier’</td>
<td>‘Xavier’</td>
</tr>
<tr>
<td>mauricio</td>
<td>Mauricio</td>
</tr>
<tr>
<td>‘Maurice’</td>
<td>‘Maurice’</td>
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<table>
<thead>
<tr>
<th>Spanish</th>
<th>Word-blending</th>
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<tbody>
<tr>
<td>cecilia</td>
<td>Chila</td>
</tr>
<tr>
<td>‘Cecilia’</td>
<td>‘Cecilia’</td>
</tr>
<tr>
<td>susana</td>
<td>Chana</td>
</tr>
<tr>
<td>‘Susan’</td>
<td>‘Susan’</td>
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</tbody>
</table>

<table>
<thead>
<tr>
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<tbody>
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<td>javier</td>
<td>Javi</td>
</tr>
<tr>
<td>‘Xavier’</td>
<td>‘Xavier’</td>
</tr>
<tr>
<td>mauricio</td>
<td>Mauricio</td>
</tr>
<tr>
<td>‘Maurice’</td>
<td>‘Maurice’</td>
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</tbody>
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<table>
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<tbody>
<tr>
<td>cecilia</td>
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<tr>
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<td>‘Cecilia’</td>
</tr>
<tr>
<td>susana</td>
<td>Chana</td>
</tr>
<tr>
<td>‘Susan’</td>
<td>‘Susan’</td>
</tr>
</tbody>
</table>
d. **Playful-words:** (Chapter 5)

- **trapa**
  - ‘noise’
  - →
  - **trápala**
  - ‘fuss and confusion’

- **trinquis**
  - ‘shot of liquor’
  - →
  - **trínquiliś**
  - ‘shot of liquor’

Except for (11b), all of the processes exemplified above operate on a single word. The outputs of Jerigonza, truncation and playful-wording are alternate forms which preserve the basic meaning of the input. Nevertheless, input and output are not semantically identical because alternate forms tend to specialize in particular functions or occur only in certain registers (e.g. Jerigonza is used by young speakers when they want to ensure secret communication; truncated forms are more likely to be used in informal registers among young people; playful words are used in child literature, music and games; and blended-forms tend to be used when one wants to be witty or sarcastic). But a more relevant fact about these sets of data is that they are related to one another in some morpho-phonological aspect. Jerigonza and playful-wording (11a and 11d), for example, yield lengthened forms that exhibit vowel copying. The sequences of underlined segments in (11a,d) act as units that serve to build the new forms. These units, however, are semantically-void because they do not contribute with any meaning. Rather, they serve as fillers that help the output form meet a particular prosodic shape.

Lengthening, of course, does not occur in truncation, but the output of this process does share with the outputs of Jerigonza and playful-wording the property of being structured in terms of prosodic templates. The reader is reminded that Spanish truncated forms (11c) are equivalent to a syllabic trochee, \( F = (\sigma\sigma) \). The syllabic trochee is also a template enforced in Jerigonza (11a), as suggested by the stress pattern of these
words (e.g. \[(cò.po)(mi.pi)(dà.pa)\] < *comida* 'food'). In playful-words (11d), the template target is not the entire output form, only its right edge. Nonetheless, this template also involves a syllabic trochee which helps form a final dactyl: \[ … \text{σ}'\text{σ}\text{σ}]_{\text{PWD}}.

Yet, beyond these partial similarities there is a wider generalization that embraces all of the processes in (11). It is the fact that each one of them represents an alternative to concatenative morphology: (i) DISCONTINUOUS MORPHEMES in Jerigonza, (ii) MORPHEME OVERLAPPING in blends, (iii) TEMPLATE-DRIVEN SHORTENING in truncated forms and (iv) TEMPLATE-DRIVEN LENGTHENING in playful-words. It is shown below that these patterns are radically different from the unmarked concatenative pattern, which allows the preservation of a strict linear order of the segments within a morpheme and imposes a sequential order on the combination of morphemes.

(12) **Concatenative Morphemes:**

\[
\begin{array}{c}
\varphi_1 \\
\quad x_1 x_2 x_3 x_4 \\
\quad y_1 y_2 y_3 y_4 \\
\end{array}
\begin{array}{c}
\text{Input} \\
\quad \quad \quad \quad \quad \\
\quad \quad \quad \quad \quad \\
\quad \quad \quad \quad \quad \\
\quad \quad \quad \quad \quad \\
\varphi_2 \\
\end{array}
\begin{array}{c}
\quad x_1 x_2 x_3 x_4 \\
\quad y_1 y_2 y_3 y_4 \\
\text{Output} \\
\end{array}
\]

In (12), all of the segments associated with morpheme \(\varphi_1\) respect a linear order (e.g. \(x_1, x_2 \ldots\)). In that same order, they precede all of the segments associated with morpheme \(\varphi_2\), whose segments, in turn, also obey a linear sequencing (e.g. \(y_1, y_2 \ldots\)). Crucially, this order is preserved by the output correspondents. Segments that are contiguous in the input have contiguous output correspondents and one morpheme may start only at the point where the previous one ends. When word-formation processes are
phonologically-conditioned, morphemes may depart from this linear order in different ways. In Spanish, the language game Jerigonza displays discontinuous morphemes (e.g. \textit{sàpalipidápa} < \textit{salida} 'exit'). The following representation illustrates the case of a morpheme whose continuous input string is discontinuously realized in the output.

(13) Alternatives to morpheme concatenation: (Discontinuous morphemes)\(^4\)

\[
\begin{array}{c}
\Phi_1 \\
\begin{array}{c}
{x_1} \quad x_2 \quad x_3 \quad x_4 \quad x_5 \quad x_6 \\
\end{array} \\
\{ (x_1 \cdot y \cdot y) \quad (x_3 \cdot x_4 \cdot y \cdot y) \quad (x_5 \cdot x_6 \cdot y \cdot y) \}_{\text{PWd}} \\
\end{array}
\]

In (13), the intrusive elements interrupt the sequencing of output correspondents, which drastically affects the contiguity from input to output forms. Note that in the output, \(x_2\) is not contiguous to \(x_3\) and \(x_4\) is not contiguous to \(x_5\), as they are in the input. These interruptions are justified by the need to meet a prosodic configuration where the correspondent of every syllable in the input heads a disyllabic foot.

(14) Structure of the output of Jerigonza:

\[
\begin{array}{c}
P\text{Wd} \\
\begin{array}{c}
F \quad F \quad F \\
\begin{array}{c}
\sigma \quad \sigma \quad \sigma \quad \sigma \quad \sigma \\
\end{array} \\
\{ s \quad a \quad p \quad a \quad l \quad i \quad p \quad i \quad d \quad a \quad p \quad a \} \\
\Phi_1 \\
\end{array} \\
\end{array}
\]

Prosodic plane

Segmental melody

Morphological plane

\(^4\) Note that epenthetic segments are not linked to a morpheme.
Second, the process of word-blending exhibits overlapping morphemes: one of the source forms overlaps upon a part of the other one with the result that certain segments become ambimorphemic. That is, some segments may be affiliated with more than one morpheme (e.g. \textit{cacaina} < \textit{caca} + \textit{cocaína}). This strategy allows two morphemes that would normally be realized sequentially to be realized simultaneously.

(15) Alternatives to morpheme concatenation: (Morpheme overlapping)

\[
\begin{array}{c}
\phi_1 \\
x_1 x_2 x_3 x_4 \\
+ \\
y_1 y_2 y_3 y_4 y_5 y_6 y_7 \\
\end{array}
\]

\[
\begin{array}{c}
\phi_2 \\
x_1 x_2 x_3 x_4 \\
\end{array}
\]

\[
\begin{array}{c}
\phi \phi \\
y_1 y_2 y_3 y_4 y_5 y_6 y_7_{PWd} \\
\end{array}
\]

Ambimorphemic segments (like $y_1$, $y_2$, $y_3$ and $y_4$ in the output) constitute a total break in the linear order of morphemes. A morpheme does not have to start where the preceding one ends. It may occur within the same span as another morpheme. Note how $y_1$ and $x_1$ in the input are simultaneously realized by a single segment $y_1$ in the output and similar situations involve the input pairs $(x_2,y_2)$, $(x_3,y_3)$ and $(x_4,y_4)$.

(16) Structure of the output of blending:

\[
\begin{array}{c}
PWd \\
F \\
\sigma \sigma \sigma \sigma \\
c a c a i n a \\
\end{array}
\]

Prosodic plane

Segmental melody

Morphological plane
In Chapter 3, I argue that this state of affairs arises when two lexical morphemes are to combine under a ban on prosodic word recursion. Because of this, the two morphemes must dwell within a single prosodic word which causes them to overlap.

Thirdly, it is evident that the output of truncation is not generated through morpheme concatenation. Truncated forms are minimal words that consist of a single binary foot. Because the output form is required to meet this prosodic configuration, all segments in the input that do not fit within the minimal-word structure must be left out.

(17) **Alternatives to morpheme concatenation**

(Template-driven shortening)

\[
\begin{array}{c}
\Phi_1 \\
x_1 \ x_2 \ x_3 \ x_4 \ x_5 \ x_6 \ x_7 \ x_8 \\
[ (x_1, x_2, x_3, x_4) ]_{PWd}
\end{array}
\]

The input segments \(x_5, x_6, x_7\) and \(x_8\) in (17) may not have an output correspondent because the correspondents of the segments \(x_1, x_2, x_3\) and \(x_4\) take up all the prosodic structure available in the minimal prosodic word.

(18) **Structure of the output of truncation**

\(\textit{inma} < \textit{inmaculada}\)

\[
\begin{array}{c}
\text{PWd} \\
\text{F} \\
\sigma \quad \sigma \\
\text{i n m a c u l a d a} \\
\phi
\end{array}
\]

Prosodic plane

Segmental melody

Morphological plane
Lastly, in playful-words, template satisfaction triggers word-lengthening. Just like in Jerigonza, epenthetic syllables serve as fillers that complete the template. However, unlike Jerigonza, the epenthetic segments do not disrupt the contiguity of the input segments. This is because the target of the template is not the entire prosodic word but only its right edge, which may not match the right edge of the main-stressed foot (e.g. \textit{guasángara} \textless \textit{guasánga} 'fuss').

(19) Alternatives to morpheme concatenation: (Template-driven lengthening)

\[
\begin{array}{c}
\phi \\
\ x_1 x_2 x_3 x_4 x_5 x_6 x_7 x_8 \\
\ [ x_1 x_2 x_3 x_4 (x_5 x_6 x_7 x_8) y_1 y_2 ]_{PWd}
\end{array}
\]

In order to avoid a match between the right edge of the main-stressed foot and the right edge of the prosodic word, the segments \(y_1\) and \(y_2\) are added to the output form. Note that these segments do not have a correspondent in the input. Their presence is necessary only to ensure that the main-stressed foot is not word-final.

(20) Structure of the output of playful-wording:

\[
\begin{array}{c}
\text{PWd} \\
\ F \\
\sigma \sigma \sigma \sigma \\
\ g u a s á n g a r
\end{array}
\]

Prosodic plane

Segmental melody

Morphological plane
In brief, Jerigonza, word-blending, truncation and playful-words constitute four
innovative ways to generate new forms outside the realm of concatenative morphology.
In order to account for these non-concatenative processes, I assume that templates do
not exist as such but as the sum of various prosodic constraints that interact to determine
a prosodic configuration. For instance, a syllabic trochee is the cooperative effect of a
constraint that requires syllable parsing, PARSE-SYLL; one that demands foot binarity, FT-
BIN; and another one that imposes left-headedness within the foot, ALIGN(F,L,σ′,L). I also
assume that morpho-phonological constraints often refer to morpho-phonological
constituents to demand that an edge of some constituent match a particular edge of
another one. It is further assumed that, the input for these processes is not an abstract
form but a derived form, as evinced by the fact that these new output forms mimic
surface properties of their source forms. Constraint interaction, alignment and output-to-
output correspondence are then three basic premises of this proposal. Next, I introduce
the theoretical frameworks wherein these ideas have been born and developed.

1.3 Theoretical background

The analyses proposed for each one of the word-formation processes under study
here are couched within the frameworks of Prosodic Morphology Theory (McCarthy and
Prince 1986, 1993a), Optimality Theory (Prince and Smolensky 1993, McCarthy and
Prince 1993a) and Correspondence Theory (McCarthy and Prince 1995, Benua 1995).
These frameworks have been selected because they offer the theoretical devices
necessary to tackle empirical challenges such as templatic forms, violability of morphophonological principles, and enforced identity between two output forms.

1.3.1 Prosodic and morphological constituents

A fundamental concept in the study of language is the notion of constituent. Constituents are constant units that play a role in the organization of a system. Since languages are organized systems, it is not surprising that each linguistic component functions in terms of precise constituent parts. The morphological and phonological components, for example, are linguistic sub-systems that operate on precise units of morphological and/or phonological material. The reality of these units is proven by the systematic behavior of linguistic processes, which only recognize constituent parts.

A prosodic hierarchy reflecting the domination relations among prosodic constituents has emerged from work by Selkirk (1980a,b), van der Hulst (1984), McCarthy and Prince (1986, 1988, 1993a,b), Hayes (1987, 1989), among many others. For the purposes here, I assume a version of the prosodic hierarchy that has been proposed by McCarthy and Prince (1993b). Although some versions of the prosodic hierarchy include the mora, these authors decide to exclude it because they did not find any alignment constraints that target this prosodic unit. In this study, I did not find any constraints requiring reference to the mora, either, which is why I assume the same stand. McCarthy and Prince (1993b) agree with Itô and Mester (1992) that quantity and weight, the main properties embodied by the mora, are attributes of syllables and segments rather than constituents themselves. It is also important to point out that, although there are
prosodic constituents higher than the prosodic word, the hierarchy in (21) includes all the constituents that are required to account for processes that do not exceed the word boundaries, such as those that I study here.

(21)   \textbf{Prosodic Hierarchy:}  
\begin{tabular}{|c|c|}
\hline
PrWd & ‘prosodic word’ \\
F & ‘foot’ \\
\(\sigma\) & ‘syllable’ \\
\hline
\end{tabular}

According to this hierarchy, syllables are parsed by feet and the latter are parsed by the prosodic word. When the prosodic hierarchy is strictly observed, the result is exhaustive parsing, in which every syllable belongs to a foot and all feet are subsumed by the prosodic word. This is illustrated below for the Jerigonza word \textit{càpasàpa} 'house'.

(22)   \textbf{Hierarchical Prosodic Structure:}

\begin{center}
\begin{tikzpicture}

\node (PrWd) {PrWd} child {node (F1) {F} child {node (s1) {\(\sigma\)} child {node(ka){k}} edge from parent node[below] {\(\wedge\)}} child {node (F2) {F} child {node (s2) {\(\sigma\)} child {node (apa){a}} edge from parent node[below] {\(\wedge\)}} edge from parent node[below] {\(\wedge\)}} edge from parent node[below] {\(\wedge\)};

\node {Prosodic word tier} edge[above] node {PrWd};
\node {Foot tier} edge[above] node {F};
\node {Syllabic tier} edge[above] node {F};
\node {Segmental melody} edge[above] node {PrWd};

\end{tikzpicture}
\end{center}

Traditional morphological categories include the root, the affix, the stem and the morphological word. I follow McCarthy and Prince (1993b) in assuming the following hierarchy, which specifies constituency relations among morphological categories.
(23) **Morphological Hierarchy:**

<table>
<thead>
<tr>
<th>MWd</th>
<th>Stem*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stem</td>
<td>Stem, Affix</td>
</tr>
<tr>
<td>Stem</td>
<td>Root</td>
</tr>
</tbody>
</table>

A **ROOT** is that basic part of a word which may not be broken down into smaller meaningful pieces. That is, it is the form that remains after all inflectional and derivational morphemes have been removed. Roots may be free, i.e. they may be realized in isolation (e.g. sal ‘salt’); or bound, i.e. they may only be realized in combination with at least one other morpheme (e.g. sal + a ‘living room’). A bound morpheme that combines with a root or more complex bases is an **AFFIX**. Affixes may be classified as prefixes (e.g. in + moral ‘immoral’), or suffixes (e.g. nacion + al ‘national’), depending on whether they precede or follow the base to which they attach. A **STEM** is that base to which affixes attach. Every time a new affix is added, a new Stem* category is created. According to this, a stem may be made up of a root only or a root plus other affixes accompanying it. Finally, the **MORPHOLOGICAL WORD** is the category that subsumes the root, stem(s) and derivational affixes. The example [ botán + ik + o] ‘botanical’ illustrates this structure.

(24) **Hierarchical Morphological Structure:**

```
  b o t a n i k o
     /     \\
    /     \\
   /     \\
  R t / S t
     /     \\
    /     \\
   /     \\
  A f    A f
     /     \\
    /     \\
   /     \\
  S t *  \\
     /     \\
    /     \\
   /     \\
  M W d  \\
```

Segmental Melody
Root/stem
Affixes
Stem*
Morphological word
It is important to clarify that, even though morphemes obey a precedence relation in underlying representations, their linear order may be affected by phonological principles. In addition to being subject to morphological constraints, which govern their distribution as prefixes or suffixes, affixes may also be governed by phonological constraints, in which case prosodic morphology phenomena arise.

1.3.2 Prosodic morphology theory

McCarthy and Prince (1986) observe that a common pattern in the generation of words is that a morphological category accommodates to an invariant frame which is equivalent to a prosodic category. In Spanish clipped-words, for example, the morphological category MWd accommodates to the form of a binary foot.

(25) **Spanish Clippings**:\(^5\)

| a. | depresión | → | depre | 'depression' |
|    | protección | → | prote | 'protection' |
|    | manifestación | → | mani | 'protest' |

b. 

\[ \text{depresión} \rightarrow \text{depre} \]

Since the number of segments a clipped form may have is not constant (e.g. \textit{zoo} < \textit{zoológico} 'zoo'; \textit{mani} < \textit{manifestación} 'protest'; \textit{prote} < \textit{protección} 'protection'; \textit{progre} \textit{progreso} 'progress')

---

<progresista ‘progressive’; etc.), the generalization on this kind of process can not be sought at the segmental level. After a study of a wide variety of processes where a templatic configuration is enforced, McCarthy and Prince (1986) conclude that templates are better defined in terms of prosodic constituents: syllable, foot, prosodic word. This important realization is the basic tenet of Prosodic Morphology Theory.

(26) Prosodic Structure of Spanish Clippings:

<table>
<thead>
<tr>
<th>PrWd</th>
<th>PrWd</th>
<th>PrWd</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>σ</td>
<td>σ</td>
<td>σ</td>
</tr>
<tr>
<td>σ</td>
<td>σ</td>
<td>σ</td>
</tr>
<tr>
<td>z</td>
<td>ó</td>
<td>o</td>
</tr>
<tr>
<td>m</td>
<td>á</td>
<td>n</td>
</tr>
<tr>
<td>i</td>
<td></td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>r</td>
<td>ó</td>
</tr>
<tr>
<td>t</td>
<td>e</td>
<td></td>
</tr>
</tbody>
</table>

Thus, even if clipped forms have very little in common on the segmental tier, there is a prosodic tier on which they are all identical and definable as a single token: MWd = F. Spanish clippings are then an instance of Prosodic Morphology, where a morphological category is required to match a prosodic one, MCat = PCat.

McCarthy and Prince (1993b) further explore the domain of the morphology/phonology interface. But this time, they incorporate the principles of Optimality Theory (see 2.2, below) into their research. One of the conclusions they reach is that templates are actually the expression of constraints that govern the way the morphological and phonological components of a language interact. They redefine
templates in terms of alignment constraints, which demand the matching of the edges of certain morpho-phonological constituents. According to McCarthy and Prince (1993a), the fundamental principles of the theory of Prosodic Morphology are:

(27) **Prosodic Morphology:** (McCarthy and Prince 1993a: 138)

a. **Prosodic Morphology Hypothesis**
   Templates are constraints on the prosody/morphology interface, asserting the coincidence of morphological and prosodic constituents.

b. **Template Satisfaction Condition**
   Templatific constraints may be undominated, in which case they are satisfied fully, or they may be dominated, in which case they are violated minimally, in accordance with the general principles of Optimality Theory.

c. **Ranking Schema**
   \[ P >> M \]

Through alignment, the Prosodic Morphology Hypothesis can be incorporated into a constraint-based model such as Optimality Theory, a framework in which alignment constraints are allowed to interact with other morpho-phonological constraints giving rise to two general rankings: (i) \( M >> P \), for plain morphology and (ii) \( P >> M \), for phonologically-governed morphology.

### 1.3.3 Optimality theory

Within Optimality Theory (Prince and Smolensky 1993, McCarthy and Prince 1993a, 1993b, and many after them), the output form is not derived through the application of a series of rules. Instead, well-formedness constraints, which are part of a
function called Evaluator, select an optimal form among the set of output forms
created by another function called Generator. Generator operates on an input form in order
to generate all possible output candidates, which are evaluated by the Eval constraints.
In principle, all constraints are universal and available for all languages, although they
are not always visible in all grammars. This has to do with the fact that constraints are
ranked with respect to one another in terms of a dominance relationship that creates a
constraint hierarchy. Compliance with a constraint hierarchy entails that dominant
constraints are to be obeyed even if satisfying their demands works to the detriment of
lower-ranking constraints. If some constraints are not visible in certain grammars it is
because they are low-ranking and their demands are overridden by those of higher-
ranking constraints. Therefore, if every language has its own ranking of the universal
constraints, each constraint hierarchy corresponds to a different grammar. According to
this, languages differ from one another only in their particular ranking of constraints, not
in the constraints themselves. This accounts for variation from one grammar to another.

Every output candidate generated by Generator is compared to its input form. After
evaluating all candidates, the one that best satisfies the constraint hierarchy is selected as
the optimal form. It is possible that the optimal candidate does not perfectly satisfy the
constraint hierarchy. Since optimal does not mean perfect, minimal violation is tolerated.
In fact, it is most likely that the optimal candidate violates some low-ranking
constraint(s). But the optimal candidate is always the one that satisfies the top-ranking
constraints better than any other candidate. Within Optimality Theory, the shape of
output forms is determined by the interaction of faithfulness and well-formedness
constraints. Constraints interact with one another through their property of being ranked.
When the demands of two constraints come into conflict, a specific dominance relation may be established between them leading to the selection of the optimal candidate. Given two constraints X and Y and two output candidates \(a\) and \(b\), if constraint X dominates constraint Y (\(X >> Y\)) and the number of violations of constraint X by candidate \(a\) is greater than the number of violations of constraint X by candidate \(b\), then the more harmonic candidate between \(a\) and \(b\) is \(b\) for incurring less violations of the dominant constraint regardless if the number of violations of constraint Y by candidate \(a\) is smaller than the number of violations of constraint Y by candidate \(b\).

(28) Constraint X >> Constraint Y

<table>
<thead>
<tr>
<th>Input:</th>
<th>Constrain X</th>
<th>Constrain Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. form₁</td>
<td>* ! *</td>
<td>*</td>
</tr>
<tr>
<td>b. form₂</td>
<td>*</td>
<td>* *</td>
</tr>
</tbody>
</table>

The effects of constraint interaction may be better appreciated in tableaux. Tableaux are representations like (28) designed within Optimality Theory in order to facilitate the task of evaluating output forms. Output candidates are listed down the leftmost column of the tableau, below the box that contains the input form. Constraints, on the other hand, occupy the top row appearing according to their rank in descending order from left to right. An asterisk is the symbol used to indicate constraint violations. But some constraints (e.g. alignment constraints) are gradient, in which case, it is better to use segments to indicate the degree to which the constraint is violated. A violation of a high-ranking constraint is of course more costly than a violation of a lower-ranking
constraint. When a violation has the effect of removing a candidate from the competition, this violation is signaled with an exclamation point and all lower cells in that row are shaded to indicate that, after that point, whether or not that candidate violates lower-ranking constraints is irrelevant. The candidate that best satisfies the constraint hierarchy is signaled by a pointing left hand ( Opr ), which means that it is the optimal output form or winning candidate. In sum, instead of deriving a form step by step, Optimality Theory selects an optimal output form according to the hierarchical order obeyed by the universal linguistic principles within a particular system.

1.3.4 Correspondence theory

Correspondence Theory, an offspring of Optimality Theory, stems from the analysis McCarthy and Prince (1993a, 1995) offer to account for Reduplicative Morphology. These authors elaborate on the fact that the Reduplicant (R), always mimics a part or the entire Base for reduplication (B). On the basis of this resemblance between R and B, McCarthy and Prince propose that these two forms stand in a correspondence relationship that enforces their identity. At the underlying level, R is represented as RED, a morpheme with no segmental substance of its own. RED must flesh out from the segmental contents of B because, at the surface level, R is required to look like B. The correspondence relationship between R and B is formalized by means of two families of constraints that represent the bi-directional relationship entailed by the identity between R and B. The Max(imixation) family of constraints responds to the direction B → R and demands that B be maximized in R. This means that everything in
B must be preserved in R. The Dep(endence) family of constraints, on the other hand, responds to the direction $B \leftarrow R$ and demands that everything in R be dependent on B. This entails that everything in R must be something originally present in B. Achieving perfect compliance with these two families of constraints translates into perfect RB-Identity (e.g. total reduplication). However, when other morpho-phonological principles take precedence over RB-Identity constraints, R may not be completely identical to B (e.g. partial reduplication).

Generalizing this approach, McCarthy and Prince propose that their analysis of reduplication as a process that obeys a correspondence relationship between two forms may be extended to regular derivational processes in order to relate an abstract input form (IF) with the resulting output form (OF). Given that input and output forms always bear a degree of resemblance, it is assumed that IF and OF are required to be similar. In other words, an output form must be faithful to its input and vice versa. Here again, a certain degree of faithfulness may have to be sacrificed if other constraints rank higher, in which case some discrepancies between OF and IF arise. But this does not mean that faithfulness between the two forms is not being enforced. It simply means that satisfying other constraints may take precedence over achieving perfect faithfulness.

Within Correspondence Theory, the phonological processes traditionally known as deletion and epenthesis are interpreted as a consequence of violating the MAX and Dep constraint families, respectively. If an input string $S_1$ contains elements \{a, b, c\} then, MAX requires that the output string $S_2$ also contain instances of the elements \{a, b, c\}. The element \{a\} in $S_1$ is the correspondent of the element \{a\} in $S_2$, the element \{b\} in $S_1$ is the correspondent of the element \{b\} in $S_2$ and so on. Every instance of an element in
$S_1$ that does not have a correspondent in $S_2$ constitutes a violation to $\text{MAX}$. So, $\text{MAX}$ is the constraint that militates against deletion, penalizing outputs that are unfaithful to their input for not having a correspondent for each and every element in the input form. In tableau (29) below, (29a) is the candidate favored by $\text{MAX}$ because it provides a correspondent for every input element.

(29) $\text{MAX}$ violations:

<table>
<thead>
<tr>
<th>Input:</th>
<th>$\text{MAX}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>{a, b, c}</td>
<td></td>
</tr>
<tr>
<td>a. $\varnothing$ {a, b, c}</td>
<td></td>
</tr>
<tr>
<td>b. {a, b}</td>
<td>* !</td>
</tr>
<tr>
<td>c. {a}</td>
<td>* ! *</td>
</tr>
<tr>
<td>d. { }</td>
<td>* ! * *</td>
</tr>
</tbody>
</table>

$\text{DEP}$, on the other hand, requires that every element in $S_2$ have a correspondent in $S_1$. That is, $\text{DEP}$, says that no instance of an element should appear in $S_2$ if there is not an instance of that element in $S_1$. So, $\text{DEP}$ is the constraint that militates against epenthesis penalizing outputs that are unfaithful to their input for having a greater number of elements than the original number existing in the input form. In tableau (30) below, (30a) is the candidate favored by $\text{DEP}$ because it does not contain any elements that lack an input correspondent.
With the incorporation of the constraints MAX and DEP, Correspondence Theory does away with the principle of Containment from Optimality Theory. As a result, the constraints PARSE and FILL are no longer necessary. Output forms are free of empty elements (FILL violations) and they do not contain prosodically unlicensed elements (PARSE-seg violations).

### 1.4 Output-to-output correspondence

Recent proposals within Correspondence Theory (Kentowicz 1994, McCarthy and Prince 1995, Benua 1995) have advanced the hypothesis that two output forms may be related to one another through a correspondence relationship that demands their identity. It is claimed that similar to the correspondence relationships that hold between a Base and its Reduplicant in reduplicative morphology or between an Input Form and its corresponding Output Form in regular derivations, there is also a correspondence relationship that relates two fully-fledged forms. According to this proposal, output forms generated from an abstract input, may serve as input in order to generate other output forms. To avoid confusion with the terms 'input' and 'output', I will refer to
derived forms that serve as input as Source Forms (SF), whereas the forms that are derived from them will be called New Output (NWO).

(32) **Output-to-Output Correspondence Relationship:**

```
Source Form (SF)  OO-correspondence  New Output (NWO)
```

The NWO that arises from an SF is the optimal candidate selected according to the constraint ranking that governs the OO-correspondence dimension. Evidence that there exists this output-to-output correspondence relationship is provided by the fact that NWO refers to derived properties of SF. This can only make sense if NWO has access in some way to the information encoded in SF. If NWO and SF are subject to correspondence constraints that enforce their identity, the fact that these forms may bear astonishing resemblance with respect to one another is not an accident but an expected result.

The arguments presented in favor of OO-correspondence by McCarthy (1995), McCarthy and Prince (1995), Benua (1995) and Kenstowicz (1994) concern allophonic realization. In cases of overapplication, a segment that should not undergo a phonological process because it is not in the context where the process is triggered undergoes the change so that it remains faithful to a changing output form (e.g.

---

6 Lexicon and Grammar Optimization (Inkelas, 1995) are principled criteria that will be used to determine what linguistic material is present underlingly. All properties that do not contribute to optimize the lexicon and/or grammar will be assumed to be derived.
Nasalization\(^7\) in Madurese reduplication: \(\pm n\mathbb{R}\pm t < RED + neat \text{ 'intentions'}\). In cases of underapplication, a segment that should undergo a phonological process for being in the context where the process is triggered does not undergo the change because it is required to remain faithful to another output form (e.g. \(l\)-deletion in Chumash reduplication: \(8\) \(c'al-c'al'\text{aluqay}' < RED + c'al\text{aluqay}'\text{ 'cradles'}\)).\(^9\) Under and over-application follow from a constraint ranking where output-to-output identity constraints dominate phonological ones: \(\text{OO-Identity} \gg \text{P.}^{10}\)

\(^7\) In Madurese, the nasality of a nasal consonant spreads rightward until it encounters an oral obstruent.

\(^8\) In Chumash, \(l\) deletes when it precedes a coronal consonant.

\(^9\) David Odden correctly points out that McCarthy and Prince (1995) account for over and under-application through BR-Identity. But given that McCarthy and Prince explicitly say that the Base is an output form (p. 274), I interpret the correspondence relationship between the Base and the Reduplicant as one that holds between output forms. In other words, BR-Identity is a type of OO-Identity, as it has also been interpreted by Benua (1995).

\(^10\) Unfortunately, some of the first output-to-output correspondence analyses proposed in the literature (McCarthy 1995, Benua 1995, Kenstowicz 1994) have been impeached of using the data opportunistically, misanalyzing it and making problematic predictions (Hale, Kissock and Reiss 1996).

Hale, Kissock and Reiss argue that the Rotuman incomplete/complete phase alternation interpreted by McCarthy (1995) as syntactico-semantically-conditioned has been misanalyzed because it is actually a phonologically-conditioned alternation. They propose an algorithm that builds binary feet from right to left within each clitic group. If a vowel is both at the right edge of a foot and a morpheme, that vowel will undergo the effects of incomplete phase formation:

\[(\text{Metathesis}) \quad [\text{ia } t\text{← (pure)}] \rightarrow [\text{ia } t\text{← (puer)}]\]

Against Kenstowicz (1994), Hale, Kissock and Reiss argue that his account of the \textit{honor...} Latin paradigm, which is based on the constraint \textit{Uniform Exponence}, inaccurately evaluates the candidates and opportunistically selects the constraints and the candidate sets in order to obtain the desired results.

With regards to Benua's (1995) account of English hypocoristics (e.g. \(\text{Lar} < \text{Larry}\)), they argue that the data has been opportunistically selected, ignoring cases where faithfulness to vowel quality is not shown (e.g. \(\text{Lawr} < \text{Lawry}\)) and cases where the hypocoristic is more faithful to the abstract input form than to the base (e.g. \(\text{Pat} < \text{Patricia}\)). For further details, the reader is referred to the original source.
The type of argument I rely on for assuming an output-to-output correspondence dimension is based on prosodic structure dependence. Based on the fact that the NWO mimics and/or depends on the prosodic structure of its SF, I assume that SF is a derived output form. I claim that, although some prosodic information may be present in underlying representations (e.g. morae), most prosodic structure in Spanish is derived (e.g. syllables, feet and prosodic word). From this standpoint, prosodic structure is an exclusive trait of output forms, not a property of abstract input forms. I follow Inkelas (1995) in her proposal that underspecification is determined by optimization with respect to the grammar. Within this approach, Lexicon and Grammar Optimization are the principles that determine what should be prespecified or underspecified underlyingly.

(33) **Lexicon Optimization:** (Inkelas, 1995: 289)

Given a set \( S = \{S_1, S_2, \ldots S_i\} \) of surface phonetic forms for a morpheme M, suppose that there is a set of inputs \( I = \{I_1, I_2, \ldots I_j\} \), each of whose members has a set of surface realizations equivalent to \( S \). There is some \( I_i \in I \) such that the mapping between \( I_i \) and the members of \( S \) is the most harmonic, i.e. incurring the fewest marks in grammar for the highest ranked constraints. The learner should choose that \( I_i \) as the underlying representation for M.

(34) **Grammar Optimization:** (Inkelas, 1995 292)

The optimal grammar is the most transparent, i.e. the one in which alternations are maximally structure-filling (Kiparsky, 1993).

Contrary to the assumption that all structure that is unmarked, redundant or predictable should be underspecified, Lexicon Optimization dictates that only predictable
structure that alternates may be underspecified. Furthermore, given two grammars that yield the same output, Grammar Optimization favors the grammar that derives that output in a feature-filling manner over one that does so in a feature-changing fashion. Within Correspondence Theory, Grammar Optimization translates into the constraint ranking MAX(imization) >> DEP(endence). Reversal of this ranking would favor feature-changing grammars. When applied to Spanish, Lexicon and Grammar Optimization reveal that every underlying vowel has a mora. Consider the case of Spanish high vocoids, /i/ and /u/, which alternate with their glide counterparts.

(35) a. ampl[í]o  b. acaric[j]o
   'I expand'   'I caress'

   me grad[ú]o         frag[w]o
   'I graduate'          'I plan'

Some authors have interpreted this alternation as evidence for an underlying vowel/glide contrast (Harris 1969, 1992, Cressey 1978, Morgan 1984, Hualde 1991). Note that despite appearing in the same position, the high vocoids of the examples in (35a) get stressed whereas those of the examples in (35b) are skipped when stress is assigned. This is exactly what would be expected if an underlying mora were posited for the former set of data but not for the latter.

(36)       μ         μ
/ampp/o     /m/graduo/    /akarisjo/    /fráwo/
Input

[amplio] [me yradúo] [akarisjo] [frávwo] Output
Nonetheless, Lexicon Optimization says that positing underlying high vocoids without a mora is too costly. This result is not stipulated but deducted from the evaluation of input candidates with respect to the relevant constraints. Tableau (37) is a Lexicon Optimization tableau, which is marked as LO to distinguish it from regular tableaux that evaluate output forms. The relevant constraints here are MAX(\(\mu\)) and DEP(\(\mu\)), which obey the ranking MAX(\(\mu\)) >> DEP(\(\mu\)), according to the principle of Grammar Optimization. Since the question is whether the underlying high vocoids have a mora or not, the input candidates are /i\(\mu\)/ ~ /i/ and /u\(\mu\)/ ~ /u/. These input candidates are compared to their attested output realizations, [i] ~ [j] and [u] ~ [w]. The candidate that best satisfies the constraint ranking is selected as the optimal input form.

(37) LO: MAX(\(\mu\)) >> DEP(\(\mu\))

<table>
<thead>
<tr>
<th>LO</th>
<th>Input candidates</th>
<th>Attested outputs</th>
<th>MAX((\mu))</th>
<th>DEP((\mu))</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>i(\mu)</td>
<td>i(\mu) j(\mu)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>i</td>
<td>i(\mu) j(\mu)</td>
<td></td>
<td>* ! *</td>
</tr>
<tr>
<td>a'</td>
<td>u(\mu)</td>
<td>u(\mu) w(\mu)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b'</td>
<td>u</td>
<td>u(\mu) w(\mu)</td>
<td></td>
<td>* ! *</td>
</tr>
</tbody>
</table>

Candidates (37a) and (37a') are the optimal input forms because they achieve perfect satisfaction of the input/output faithfulness constraints. Candidates (37b) and (37b') correspond to the underspecified inputs. They run afoul of the constraint DEP(\(\mu\)) twice each because in the attested outputs the vocoids /i/ and /u/ always bear a mora whether they are realized as vowels or glides (Dunlap 1991, Rosenthall 1994).
Means that contrary to the widely held view proposed by moraic phonologists that vowels are moraic whereas glides are not, in Spanish, both vowels and glides are moraic. As pointed out by Rosenthall (1994, p. 135) 'the terminology used to describe vowels and their nonmoraic counterparts fails here [in Spanish] because the high vocoid component of a diphthong is moraic.' Positing a mora for every underlying vocoid is crucial in order to account for primary stress in Spanish given it is quantity-sensitive and that high vocoids contribute with weight whether they surface as vowels or glides. For a complete discussion on the issue of moraic glides, the reader is referred to Dunlap (1991) and Rosenthall (1994).

Lexicon Optimization also requires that all other underlying vowels have a mora. Otherwise, gratuitous violations of \( \text{DEP}(\mu) \) would arise, as illustrated in tableau (38) below.

\[
\text{(38) LO: } \text{MAX}(\mu) >> \text{DEP}(\mu)
\]

<table>
<thead>
<tr>
<th>Input candidates</th>
<th>Attested outputs</th>
<th>( \text{MAX}(\mu) )</th>
<th>( \text{DEP}(\mu) )</th>
</tr>
</thead>
</table>
| \( a \)          | \( \text{a}_\mu \text{k a}_\mu \text{r i}_\mu \text{s i}_\mu \text{o}_\mu \) | \( \text{a}_\mu \text{k a}_\mu \text{r i}_\mu \text{c j}_\mu \text{o}_\mu \) | \text{a}_\mu \text{k a}_\mu \text{r i}_\mu \text{c j}_\mu \text{o}_\mu | \* ! ** * * *
| \( b \)          | \( \text{a}_\mu \text{k a}_\mu \text{r i}_\mu \text{s j}_\mu \text{o}_\mu \) | \* ! ** * * * |
| \( a' \)         | \( \text{f r a}_\mu \text{g u}_\mu \text{o}_\mu \) | \( \text{f r a}_\mu \text{y w}_\mu \text{o}_\mu \) | \* ! ** * * |
| \( b' \)         | \( \text{f r a}_\mu \text{g u o} \) | \( \text{f r a}_\mu \text{y w}_\mu \text{o}_\mu \) | \* ! ** * * |

Since surface vocoids are always moraic in Spanish, the optimal input form must be one in which every vocoid has a mora (38a) and (38a'), so that this structure does not have to be filled in, thereby giving rise to unnecessary \( \text{DEP}(\mu) \) violations (38b) and (38b').
The question why the high vocoids of the examples in (35) do not get stressed has already been answered within Optimality Theory by Rosenthal (1994), based on previous work by Harris (1983, 1989, 1992) and Dunlap (1991). As pointed out by these authors, stress in Spanish falls into two main patterns. In Type-A forms, primary stress falls on the final syllable if it is closed by a consonant other than /s/, and on the penult otherwise (39a). In Type-B forms, stress is pushed back one syllable in the first two sets of forms, with primary stress falling on the penult if the final syllable is closed, and on the antepenultimate syllable when both the penult and the ultimate syllable are open (39b). In both patterns, if the penultimate syllable is closed and the final is open, stress falls on the penult. A closed syllable is bimoraic and may support a binary foot. An open syllable is monomoraic and may not form a foot by itself. The following sets of data are representative of these stress patterns.

(39)  
\begin{align*}
\text{a. Type A:} & & \text{b. Type B:} \\
[\ldots H] & \text{gentíl} & [\ldots \sigma H] & \text{cárcel} \\
& \text{canción} & \text{‘song’} & \text{mártir} & \text{‘martyr’} \\
& \text{vendedor} & \text{‘salesman’} & \text{revólver} & \text{‘revolver’} \\
[\ldots L L] & \text{gitáno} & \text{‘gypsy’} & [\ldots \sigma LL] \\
& \text{compléto} & \text{‘complete’} & \text{pájaro} & \text{‘bird’} \\
& \text{cirujáno} & \text{‘surgeon’} & \text{sílaba} & \text{‘syllable’} \\
[\ldots H L] & \text{artísta} & \text{‘artist’} & \text{tránsito} & \text{‘traffic’} \\
& \text{inteligénte} & \text{‘intelligent’} & \text{} & \text{} \\
& \text{cantánte} & \text{‘singer’} & \text{} & \text{(Same as Type A)}
\end{align*}
Type A, whose forms outnumber those of Type B, has been recognized as the unmarked stress pattern. Type B differs from Type A only in the extrametrical character of the final mora. In other words, when parsing Type-B forms, the final mora may not be used to build a foot. Within Optimality Theory, extrametricality is a prosodic effect that follows from the interaction of the constraints NONFINALITY and ALIGN(F,R,PWd,R).

(40) NONFINALITY:  
Non-Finality  
The main-stressed foot is not word final.

(41) ALIGN(F,R,PWd,R):  
Align the main-stressed foot  
Align (F,R,PWd,R)  
The right edge of the main-stressed foot matches the right edge of the prosodic word.

In Type-A words, the right edge of the main-stressed foot and the right edge of the PWd are aligned because ALIGN(F,R,PWd,R) dominates NONFINALITY. As a consequence of this ranking, the high vocoid of the examples in (35a) is realized as a vowel because it must bear stress so that the foot is formed in the right position to make this alignment possible (see 42a below). In tableau (42), candidate (42b) is ruled out by ALIGN(F,R,PWd,R) because the main-stressed foot is separated from the right edge of the PWd by one mora.

(42) Type A:  ALIGN(F,R,PWd,R) >> NONFINALITY

<table>
<thead>
<tr>
<th>Input:</th>
<th>ALIGN(F,R,PWd,R)</th>
<th>NONFINALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ( (a_i m_i \ p \ l_1 i_o)_{p \ w d} )</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>b. ( ([a_\mu \ m_\mu \ p \ l_j o_\mu])_{p \ w d} )</td>
<td>( \mu ) !</td>
<td></td>
</tr>
</tbody>
</table>
Conversely, in Type-B words the right edge of the main-stressed foot does not match the right edge of the PWd because NONFINALITY dominates ALIGN(F,R,PWd,R). Consequently, the high vocoid of the examples in (35b) is realized as a glide because it may not bear stress if the main-stressed foot is to be non-final. In tableau (43) below, candidate (43d) forms a foot whose right edge matches the right edge of the PWd in compliance with ALIGN(F,R,PWd,R). But since NONFINALITY is the dominant constraint in Type-B words, a configuration where the foot is minimally pushed back one mora to avoid finality is preferred (43b). Shifting the foot back more than one mora gives rise to unnecessary ALIGN(F,R,PWd,R) violations (43a,b).

(43) Type B: NONFINALITY >> ALIGN(F,R,PWd,R)

<table>
<thead>
<tr>
<th>Input:</th>
<th>aµk aµr iµs iµoµ</th>
<th>NONFINALITY</th>
<th>ALIGN(F,R,PWd,R)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[(ãµ. k aµ). r iµ. s jµ oµ]PWd</td>
<td>µ ! µ µ</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>[aµ. (k ãµ. r iµ). s jµ oµ]PWd</td>
<td>µ ! µ</td>
<td></td>
</tr>
<tr>
<td>c. ⊨</td>
<td>[aµ. k aµ. (r iµ. s jµ) oµ]PWd</td>
<td>µ</td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>[aµ. k aµ. r iµ. (s iµ oµ)]PWd</td>
<td>* !</td>
<td></td>
</tr>
</tbody>
</table>

Lexicon Optimization would also require that syllable, foot and prosodic word structure be present in the input, so that the appearance of these prosodic constituents in the output is not sanctioned by DEP. However, an important distinction between linguistic material and linguistic structure must be taken into consideration. Whereas features, segments and morae are linguistic material; syllables, feet and prosodic words are linguistic structure. The constraints DEP and MAX regulate the identity between input
and output in terms of linguistic material but they have nothing to say with respect to their structure. Within Optimality Theory, linguistic structure is provided by the function GEN, which generates all possible structural associations for the material contained in any given input. Consequently, syllables, feet and prosodic words, which are different levels of prosodic structure, fall beyond the scope of Lexicon Optimization. These structural units are projected by GEN in order to license morphological material at the surface level.

It is the role of EVAL, the evaluator function, to determine which of all the possible structural associations projected by GEN is optimal. Syllabification is interpreted as the reconciliation of two sources of conflict: each segment's suitability for being parsed in a particular syllabic position, and prosodic constraints such as ONSET, NOCODA, *COMPLEX, etc., which impose a certain structure on syllables (Prince and Smolensky, 1993, p. 127).

(44) ONSET: A syllable must have an onset.

NOCODA: Syllables may not have codas.

*COMPLEXO,N,C: Onset, syllables and codas may not be bisegmental.

Similarly, foot structure arises from reconciling a prosodic licensing principle, PARSE-SYLL, with prosodic structure constraints such as FOOT-BINARITY, FOOT-FORM and different versions of ALIGNMENT.

(45) PARSE-SYLLABLES: A syllable must be parsed by a foot.

FOOT-BINARITY: Feet are binary under a moraic or syllabic analysis.

ALIGN(PCat₁, x, PCat₂, x): Align an edge of PCat₁ with the corresponding edge of PCat₂.
Satisfaction of these constraints is checked at the surface level not at the underlying level, where prosodic structure does not exist because it has not been projected by GEN.  

Given that most prosodic structure is derived, it follows that a process that requires reference to the prosodic structure of the input may not have an abstract form as input. Such input must necessarily be a derived form. As an example, consider the case of one of two truncation processes in Spanish.

(46) **Type-B hypocoristics:**

<table>
<thead>
<tr>
<th>Type</th>
<th>Original</th>
<th>Derived</th>
<th>New Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>mojsés →</td>
<td>≠é≠e</td>
<td>Moisés</td>
</tr>
<tr>
<td></td>
<td>balentín →</td>
<td>tino</td>
<td>Valentín</td>
</tr>
<tr>
<td>b.</td>
<td>sesílja →</td>
<td>≠íla</td>
<td>Cecilia</td>
</tr>
<tr>
<td></td>
<td>gonsálo →</td>
<td>≠álo</td>
<td>Gonzalo</td>
</tr>
<tr>
<td>c.</td>
<td>lásaro →</td>
<td>≠áo</td>
<td>Lázaro</td>
</tr>
<tr>
<td></td>
<td>tránsito →</td>
<td>tán≠o</td>
<td>Tránsito</td>
</tr>
</tbody>
</table>

For the immediate purposes, I disregard sound substitutions (e.g. ≠ < s), to focus on the contrast in prosodic structure between SF and NWO. The SF’s in (46a) are oxytones; those in (46b) are paroxytones and those in (46c) are proparoxytones. Regardless the stress pattern of SF, the NWO is always equivalent to a syllabic trochee built preferably on open syllables, although the first syllable may be closed by a nasal consonant. The striking fact about these data is that the segments parsed by the syllabic trochee come from the main-stressed foot of SF.

---

11 The fact that prosodic structure is projected by GEN does not preclude exceptional cases of lexicalized prosodic structure. The irregular stress of a small set of Spanish words (e.g. café ’coffee’, sofá ’sofa’, etc.) would require an underlying degenerate foot.
Faithfulness to the main-stressed foot:

a. \[\text{[moi.(sés)]} \rightarrow [(≠ê.≠e)]
\[\text{[ba.len.(tín)]} \rightarrow [(ti.no)]\]

b. \[\text{[se.(si.lja)]} \rightarrow [(≠í.la)]
\[\text{[gon.(sá.lo)]} \rightarrow [(≠á.lo)]\]

c. \[\text{[(lá.sa).ro]} \rightarrow [(lá.≠o)]
\[\text{[(trán.si).to]} \rightarrow [(tán.≠o)]\]

In order to capture this important generalization, any account of this process needs to refer to the prosodic structure of SF, which means that SF may only be a derived output form.

1.5 Various instances of OO-correspondence in Spanish

Now that OO-correspondence has been motivated, I proceed to show how Jerigonza, word-blending, truncation and playful-words are processes that enforce the identity between two output forms. For each one of these processes, there exists empirical evidence that the new forms are derived from an output form. A striking property of Spanish blends, for example, is that the blended form has the exact same prosodic structure as one of its SF’s.

Prosodic Resemblance between NwO and SF in blends:

\[\text{SF}_2 \quad [(sú.cio)] \quad [(drá.ma)]\]
\[\text{SF}_1 \quad [\text{so.cie.(dád)}] \quad [\text{cru.ci.(grá.ma)}]\]
\[\text{NwO} \quad [\text{su.cie.(dád)}] \quad [\text{cru.ci.(drá.ma)}]\]
The NwO's [su.cie.(dád)] and [cru.ci.(drá.ma)] mirror the prosodic structure of one of their SF's: [so.cie.(dád)] and [cru.ci.(grá.ma)], respectively. The same number of syllables and the same stress pattern reveal the identity in syllable and foot structures between SF₁ and NwO. This important property of blends would be merely an accident if we were to assume that blends are derived from a pair of abstract input forms. By contrast, if one assumes that blends are derived from output forms which, as all surface forms, already have a defined prosodic structure, it becomes evident that the reason for this resemblance is because blends preserve the prosodic information encoded in their SF’s.

(49) **Blending model:**

\[ \text{IF} \]

\[ \text{SF} \]

\[ \text{B} \]

**IO-Correspondence**

**OO-correspondence**

According to this model, the base for a blend B is a source form SF, which is derived from an abstract input form IF. SF remains faithful to IF because they stand in an IO-Correspondence relationship that enforces (SF-IF)-Identity. Similarly, B resembles SF because they stand in an OO-correspondence relationship that promotes (SF-B)-Identity. It is precisely this OO-correspondence relationship that forces B to mimic derived properties of SF which IF does not have. Also note that B and IF are not required to remain faithful because they are not governed by a correspondence relationship. This is consistent with the finding that the new output form (whether it is a blend, Jerigonza
word, truncated form or playful-word) never displays any properties of IF that are not present in SF.

Like blending, other Spanish word-formation processes rely on prosodic information that can only be found in an output form. In one of the three varieties of Jerigonza I have identified, a sequence of epenthetic segments (e.g. \( CV \)) is added immediately to the right of every syllable boundary in SF.

(50) **CV-Epenthesis in Jerigonza:***

\[
\begin{array}{|c|c|}
\hline
\text{SF} & \text{NwO} \\
\hline
\text{a.mí.ó} & \text{á.pa.mi.pi. ýó.po} \quad \text{‘friend’} \\
\text{bár.ko} & \text{bár.pa.kó.po} \quad \text{‘ship’} \\
\text{pro.tés.ta} & \text{prò.po.tès.pe.tá.pa} \quad \text{‘protest’} \\
\hline
\end{array}
\]

Without access to the syllable structure of SF, the generalization that epenthetic segments appear after every syllable boundary could not be captured. Only if this process has access to the prosodic structure of an output form is it possible to explain its regularity in regards to the site of epenthesis. An abstract input may not be the form that is fed into GEN in order to create Jerigonza words simply because abstract input forms do not contain derived properties such as syllable structure. The following model observes the same correspondence relationships as (49) above only that it applies to Jerigonza, J.

(51) **Jerigonza model:**

\[
\begin{array}{|c|c|}
\hline
\text{IF} & \\
\hline
\vdash \downarrow \text{IO-Correspondence} & \\
\hline
\text{SF} \quad \leftrightarrow \quad J & \\
\hline
\text{OO-correspondence} & \\
\hline
\end{array}
\]

45
Within Spanish Truncatory Morphology, Type-A hypocoristics are disyllabic forms that mimic the two leftmost syllables of SF. However, when the peninitial syllable of SF is heavy, it is possible to drop the consonant that closes that syllable (Prieto 1992).

(52) Type-A Hypocoristics:

\[
\begin{array}{c|c|c}
SF & NwO \\
\hline
\ddot{o}l.fo & \ddot{o}.ol & \ddot{o}.o & Rodolfo \\
ar.mán.do & \ddot{a}.man & \ddot{a}.ma & Armando \\
fer.nán.do & \ddot{f}.nan & \ddot{f}.na & Fernando \\
\end{array}
\]

Note that the truncated form that retains the coda of the second syllable remains more faithful to the source form. Interestingly, the segment that closes the second syllable of the truncated form must be a segment parsed under the second syllable of SF. The examples in (53) show that when this is not the case (e.g. when the consonant that closes the second syllable in the truncated form is parsed under the third syllable of the source form), the preservation of that extra segment is not possible.

(53) Type-A Hypocoristics:

\[
\begin{array}{c|c|c}
SF & NwO \\
\hline
t.e.ré.sa & t.e.re & *t.e.res & Teresa \\
do.ló.res & d.o.lo & *d.o.lor & Dolores \\
mar.ya.rí.ta & m.a.ya & *m.a.r.gar & Margarita \\
\end{array}
\]

These facts indicate that the generation of truncated forms is sensitive to the syllable structure of SF. The conclusion one is led to, once again, is that the input for truncation is a derived output form, which supports the following truncation model.
Lastly, consider the case of Spanish playful-words. In the following examples, a sequence of epenthetic segments (e.g. Liquid + Vowel) is added immediately to the right of the main-stressed foot of SF.

Epenthesis in this type of playful-words helps avoid a word-final foot. This process implements a change in prosodic structure: \([ … (\sigma\sigma)]_{pwd} \rightarrow [ … (\sigma\sigma\sigma)]_{pwd}\). Such transformation is obviously not arbitrary because epenthetic segments may not be introduced just anywhere. Reference to the main-stressed foot of SF is required in order to select the optimal NwO. For this reason, only an output form endowed with prosodic structure may be the input of playful-words.
In sum, Jerigonza, blend, truncated forms and playful-words are various instances of OO-correspondence. This proposal results in a model of Spanish word-formation that consists of two levels. In level 1, an output form (OF) is generated from an abstract input form (IF). In level 2, the output of level 1 serves as a source form (SF) to generate a new output form (NWO).

Traditional studies on Spanish morphology have only recognized level 1. The current study acknowledges the existence of non-concatenative word-formation processes in Spanish and places them in a second level since they operate on the output of level 1.
CHAPTER 2

DISCONTINUOUS MORPHEMES IN JERIGONZA

2.0 Introduction

Jerigonza is a speech disguise in Spanish. It is used by young people in the Spanish speaking world in order to procure private communication between them, for the purpose of concealment or simply for entertainment.

(1) Spanish:
Quiero que Pablo y María vengan a la fiesta esta noche, pero no quiero que sus amigos se aparezcan con ellos.

Jerigonza: (in Spanish orthography)
Quieperopo quepe Papablopo ypi Maparipiapa vempegampa apa lapa fiespetapa espetapa nopochepe peperopo nopo quieperopo quepe suspu apamipigospo sepe aparezpecampa compo epelospo.

‘I want Paul and Mary to come to the party tonight, but I don’t want their friends to show up with them’

There exist different versions of this language game. In all versions, however, words are generated by adding an epenthetic CV-syllable for every syllable in the source form. The data in (1) are representative of a variety of Jerigonza spoken in Colombia. In this version, the epenthetic syllable is placed immediately to the right of every syllable
boundary, C is usually the segment /p/ and V is a copy of the preceding syllable nucleus. This is illustrated below for the example *quie.pe.ro.po* < *quie.ro* 'I want'.

\[
\begin{array}{ll}
(2) & \text{Source form} \\
& qu\ i\ e\ .\ r\ o \\
& qu\ i\ e\ .\ p\ e\ .\ r\ o\ .\ p\ o \\
& \text{New output}
\end{array}
\]

Known as speech disguises, secret languages, play languages or language games, linguistic systems like Jerigonza are alternate languages that exist alongside natural languages (Bagemihl, 1988). Common to all alternate languages is the property of manipulating the linguistic structure of a natural language in some way. The term **LUDLING** was coined by Laycock (1972) in order to refer to such systems.

\[\text{(3) Definition of Ludlings:}\]

“A ludling is […] the result of a transformation or series of transformations acting regularly on an ordinary language text, with the intent of altering the form but not the content of the original message, for purposes of concealment or comic effect. (Laycock 1972: 61).

In this chapter, I argue that Jerigonza is an infixing ludling that manipulates the morpho-phonological structure of Spanish. Jerigonza acts on Spanish to create a uniform prosodic structure: a prosodic word built on a series of disyllabic feet, \[ (\sigma\sigma)^n \] \[^{\text{pwd}}\]. I argue that the reason why uniform disyllabic footing arises is because the leftmost and/or rightmost segment of every syllable in the source form is required to correspond to the leftmost and/or rightmost element of a binary foot in Jerigonza. Epenthetic syllables are
added to help form binary feet that make this anchoring possible. Epenthesis, however, also causes some segments that are contiguous in the source form to have non-contiguous output correspondents. An important restriction on epenthetic syllables is that they may not appear in the prominent position of the foot. This is a consequence of the fact that the projection of prosodic heads is dependent on the source form. Only those syllables that have correspondents in the source form may be foot heads. In short, Jerigonza is a case of phonologically-driven morphology where the segments that constitute the exponence of a morpheme are forced to appear discontinuously so that a uniform foot structure is met.

The organization of this chapter is as follows. Section 2.1 contextualizes Jerigonza within the frame of linguistic systems. Section 2.2 reviews an autosegmental analysis proposed by Bagemihl (1988) to account for a Tigrinya ludling of the same type as Jerigonza. Section 2.3 evaluates this proposal. Section 2.4 discusses the properties of the three varieties of Jerigonza I have identified. In section 2.5, I propose an analysis of these data based on prosodic constraints. Section 2.6 summarizes the findings.

2.1 Characterizing ludlings

Bagemihl (1988) devotes his entire dissertation to the study of alternate linguistic systems. He proposes a typology of languages based on several linguistic domains: Syntax, Lexicon, Morphology and Phonology. Languages may be compared to one another according to these components. A language $L_1$ is different from a language $L_2$  

---

1 Bagemihl (1988) also includes a Modality domain, which refers to the type of channels used in the expression of language (e.g. articulatory-auditory vs. manual-visual). Since this domain is not relevant for the purposes here, it will be disregarded.
when they differ in any of these domains. Spanish, for example, is extremely different from Chinese because these two languages differ in all of their components.

(4) Two Separate Linguistic Systems: \hspace{1cm} (Based on Bagemihl, 1988)

\[
\begin{array}{ll}
L_1 & L_2 \\
\text{Syntax}_1 & \text{Syntax}_2 \\
\text{Lexicon}_1 & \text{Lexicon}_2 \\
\text{Morphology}_1 & \text{Morphology}_2 \\
\text{Phonology}_1 & \text{Phonology}_2 \\
\end{array}
\]

The scheme in (4) corresponds to the relationship between two SEPARATE LANGUAGES, which do not have any of their domains in common. But certain linguistic systems may share one or more domains. The more domains two linguistic systems have in common, the more closely related they are. Such is the case of ALTERNATE LANGUAGES. Under this category, Bagemihl groups linguistic systems that always feed on the Syntax domain of a Separate Language and which may additionally use one or more of the remaining domains (e.g. Lexicon, Morphology and Phonology). Alternate Languages are then ‘parasitic’ linguistic systems that feed on the linguistic structure of a Separate Language. Alternate Languages are not identical to their host Separate Languages because they diverge from them by having one or more alternate domains.

Of special interest to the current research on Jerigonza is a subcategory of Alternate Languages known as LUDLINGS. Bagemihl (1988) redefines the concept of ludling. He proposes to characterize ludlings as linguistic systems that utilize ‘various forms of non-concatenative (and occasionally concatenative) morphological
manipulation’. A ludling shares with its host Separate Language every one of its linguistic domains except for the Morphology domain, for which it has an alternate one.

(5) **A Ludling with its Host Language**: (Based on Bagemihl, 1988)

```
L₁/L₂
├ Syntax₁,₂
├ Lexicon₁,₂
└ Morphology₁ ——— Morphology₂
  └ Phonology₁,₂
```

The scheme in (5) illustrates the dependence relationship of an Alternate Language with respect to a Separate Language. This diagram may then represent the relationship between Jerigonza, L₂, and Spanish, L₁. Jerigonza coexists with Spanish and shares all of its linguistic structure except for the Morphology. But even the Morphology of L₂ depends on L₁ since Morphology₂ is derived from Morphology₁. The relationship between Spanish and Jerigonza is then one of proper inclusion such that Jerigonza may not exist without a Spanish source form.

### 2.2 Jerigonza as infixing morphology

Bagemihl (1988) subdivides ludlings in three broad categories. (i) In **TEMPLATIC LUDLINGS** the segmental string of a source form provided by a Separate Language is mapped onto a partially-specified skeletal template imposed by the ludling morphology. This type of ludling constitutes the alternate-morphology counterpart of root-and-pattern morphology found in certain Separate Languages (e.g. Arabic), as noted by McCarthy.
(1981, 1985). Instances of this type of ludling occur in Amharic, Canadian Unuit, etc. (ii) In REVERSING LUDLINGS or backwards languages, different kinds of reversals operating on segments or prosodic units may occur. This type of alternate morphology violates a constraint that holds strong in regular phonology: the prohibition against crossing of association lines in phonological representations. Instances of Reversing Ludlings occur in Tagalog, Javanese, Hanunoo, etc. For an account of Reversing Ludlings within Optimality Theory see Itô, Kitagawa and Mester 1996, who study a Japanese argot. (iii) The last category is labeled INFIXING LUDLINGS. This type is characterized by the fact that a fully or partially specified sequence of segments is introduced within the melodic string of a source form. This epenthetic material resembles an infixing morpheme but it is semantically void. Jerigonza belongs to this category.

2.2.1 Infixed and spreading

Bagemihl (1988) develops an autosegmental analysis for an Infixing Ludling that occurs in Tigrinya (6), a Semitic language spoken in Eritrea. This ludling bears a striking resemblance with a variety of Jerigonza spoken in Costa Rica (7). The only aspect in which the Tigrinya ludling differs from Costa Rican Jerigonza is that the consonantal segment of the infix is /g/ instead of /p/. (Epenthetic material appears underlined)

(6) Infixed Ludling in Tigrinya: (Bagemihl, 1988: 243)

<table>
<thead>
<tr>
<th>a.</th>
<th>s’ahifu</th>
<th>s’agahigifugu</th>
<th>‘he wrote’</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>bi≠a</td>
<td>bigi≠aga</td>
<td>‘yellow’</td>
</tr>
<tr>
<td>b.</td>
<td>?intay</td>
<td>?igintagay</td>
<td>‘what’</td>
</tr>
<tr>
<td></td>
<td>k’arma</td>
<td>k’agarmaga</td>
<td>‘gnat’</td>
</tr>
</tbody>
</table>
(7) **Infixing Ludling in Spanish**: (Costa Rican Jerigonza)

a. libro & lipibro & ‘book’
cadena & capadepenapa & ‘chain’

b. puerta & puepertapa & ‘door’
alfombra & apalfopombrapa & ‘carpet’

The examples in (6a) and (7a) contain open syllables only. Those in (6b) and (7b) include closed syllables. The latter show that, when the syllable is closed, the infix separates the syllable coda from the rest of the syllable. In order to account for the data in (6), Bagemihl proposes an autosegmental analysis that requires two rules. One of them is an epenthesis rule that introduces two skeletal slots immediately after every syllable head. This rule needs apply after syllabification, once syllable heads have been projected.

(8) **Epenthesis in an Infixing Ludling**: (Bagemihl, 1988:247)

\[
\emptyset \rightarrow X \ X / X \ \_\_\_ \\
\left|\begin{array}{c}
g
\end{array}\right|
\]

The first of these slots is pre-specified with all of the features of the segment /g/, whereas the second one is unspecified except for the feature [+syllabic], which is encoded in the diacritic X = syllable head. The second rule Bagemihl needs to account for (6) corresponds to a spreading process.

(9) **Spreading in an Infixing Ludling**: (Bagemihl, 1988: 247)

\[
X \ X \\
\left|\begin{array}{c}
[\alpha F]
\end{array}\right|
\]
The features of the vowel preceding the unspecified X-slot spread rightward in order to provide the void slot with the features it needs to be phonetically realized. For this to be possible, Bagemihl needs assume that the infixed consonant occupies a different plane so that it does not block spreading. With the minor adjustment of pre-specifying the features of /p/ instead of /g/, these two rules would also account for the Spanish data in (7). The following derivation illustrates the application of these rules to the Spanish word *puerta* 'door'.

(10)  

\[
\begin{array}{ccccccc}
p & u & e & r & t & a \\
\hline
\hline
\end{array}
\]

\[
\begin{array}{ccccccc}
p & u & e & r & t & a \\
\hline
\hline
\end{array}
\]

\[
\begin{array}{ccccccc}
p & u & e & r & t & a \\
\hline
\hline
\end{array}
\]

\[
\begin{array}{ccccccc}
p & u & e & r & t & a \\
\hline
\hline
\end{array}
\]

\[
\begin{array}{ccccccc}
p & u & e & r & t & a \\
\hline
\hline
\end{array}
\]
2.2.2 Objections against the infixation/spreading analysis

It is true that rules (8) and (9) are capable of generating all of the ludling data from Tigrinya and Costa Rican Spanish. Nonetheless, there are several issues that need be addressed. I argue that the formalization of the process as in (8) and (9) is not satisfactory for several reasons. First, the fact that rule (8) introduces two skeletal positions is inconsistent with the general dictum that a rule implements a single operation. This objection could be answered by formulating two epenthesis rules: one that inserts a consonant and another one that inserts a vowel.

(11) Two epenthesis rules:
∅ → X / X 
∅ → X / X’ 

However, the crucial point is that, neither rule (8) nor the two rules in (11) take into account that the inserted sequence [X X] is equivalent to a prosodic constituent. A better alternative would then be to reformulate the process as insertion of a syllable node.

(12) ∅ → σ

However, given that the epenthetic syllable is sometimes inserted within a syllable (e.g. mapar < mar 'sea'), the context of epenthesis may not be defined on the same tier. This is why Bagemihl had to refer to the skeletal tier, where epenthesis involves two rather than one element. But if the context is defined on the skeletal tier, the syllable node would then be inserted on that tier for it is there where the ____ is (see 13). It would be rather bizarre that an empty spot on the skeletal tier could turn into a unit of the syllable tier.
The need to segregate morphemes is another weakness of this account. The only reason to assume that the infix occupies a different plane is to keep it from blocking spreading when rule (9) applies. The representation in (14) illustrates how spreading is blocked if the infixed consonant is allowed to appear on the same melodic tier.

(14) Blocking of spreading:

\[
\begin{array}{cccccccc}
  p & u & e & p & r & t & a & p \\
  | & | & | & | & | & | & | \\
  [X X X X X X][X X] X X
\end{array}
\]

Rule (9) fails

Assuming that there is morpheme segregation in Spanish and Tigrinya only to avoid this blocking is a very costly solution given that there is no independent evidence to support it. A more viable alternative is available within a Feature Geometry Theory such as Clements and Hume (1995). The infixed consonant would not block spreading if the process is assumed to take place at a level of structure where consonants are transparent. The spreading process in (9) may be more accurately formulated as spreading of the Vocalic node, which is the node that subsumes all of the place and aperture features of vocoids. According to Clements and Hume’s model (see 15 below), the Vocalic node is a dependent of the C-place node, which in turn depends on the Oral Cavity node. The latter is directly linked to the Root node, which subsumes all segmental features. One of the reasons why spreading of vocalic features in the Spanish and Tigrinya languages must occur at the Vocalic-node level is because the epenthetic
vowel acquires all of the place and aperture features of the preceding vowel. By formulating this vowel-copy process as spreading of the Vocalic node, only one spreading operation is necessary instead of several ones, as it would be required if spreading were assumed to take place at a level lower than the Vocalic node.

(15) **Feature Geometry:** (Clements and Hume, 1995: 292)

a. Consonants

b. Vocoids

The other reason why spreading must occur at the level of the Vocalic node has to do with a salient difference in the featural architecture of consonants and vocoids. Due to the fact that simplex consonants lack the Vocalic node that vocoids have, spreading of
the Vocalic node across simplex consonants is expected to occur unproblematically. Simplex consonants may not block spreading of the Vocalic node because they do not have a Vocalic node. However, simplex consonants may block any spreading process between two vocoids that occurs at a level higher than the Vocalic node because, above this point, consonants have the same structure vocoids have. Therefore, a prediction made by this model is that the highest node that may spread from one vocoid to another, across a simplex consonant, is the Vocalic node. Rule (16) exploits this possibility to achieve a more accurate formalization of the spreading process than rule (9). By operating at a sub-root level, it manages to rid the analysis of the need to stipulate morpheme segregation.

(16) \[
\begin{array}{c}
\text{X} \\
\text{C-place} & \text{C-place} \\
\text{Vocalic}
\end{array}
\]

But even after incorporating these partial solutions a major objection to this analysis remains. Rules (11) and (16) still do not explain why this epenthesis process should occur. They describe a way in which the process might be taking place but they do not reveal the reason for it. Why should Jerigonza words contain twice as many syllables as their source form? I propose a solution that focuses on a level of prosodic

---

2 A simplex consonant is one that has a single place feature (e.g. [labial] for /p/, [coronal] for /t/, etc.), which is dominated by the C-place node. A complex consonant is one that has two place features (e.g. [dorsal] and [labial] for /g/); one of them dominated by the C-place node (e.g. the main articulation) and the other one by the V-place node (e.g. the secondary articulation).
structure higher than the syllable. When foot structure is taken into account, the actual cause of epenthesis in Infixing Ludlings is revealed.

2.3 The properties of Jerigonza

One may find different varieties of Jerigonza throughout the Spanish speaking world. Among speakers from Colombia, Costa Rica, Peru and Spain, I have been able to identify three of them. Considering all the dialectal variation of Spanish, it would not be surprising if additional varieties were identified by subsequent research. In any event, the three varieties included in the corpus of data for this chapter offer an ample range of patterns in order to capture the generalizations on which the language game operates. The following data are representative of these three types of Jerigonza.

(17) a. Colombian Jerigonza: (JER-1)

<table>
<thead>
<tr>
<th>Source Form</th>
<th>New Output</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>can.ción</td>
<td>càm. pà.cióm.po</td>
<td>'song'</td>
</tr>
<tr>
<td>ma.és.tro</td>
<td>mà. pà.és.pe.tró.po</td>
<td>'teacher'</td>
</tr>
<tr>
<td>pájaro</td>
<td>pà. pà.jà.pa.rò.po</td>
<td>'bird'</td>
</tr>
</tbody>
</table>

b. Peruvian Jerigonza:³ (JER-2)

<table>
<thead>
<tr>
<th>Source Form</th>
<th>New Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>can.ción</td>
<td>cha. càn.cha.ción</td>
</tr>
<tr>
<td>ma.és.tro</td>
<td>cha. mà.cha.ès.cha.tró</td>
</tr>
<tr>
<td>pájaro</td>
<td>cha. pà.cha.jà.cha. rò</td>
</tr>
</tbody>
</table>

c. Costa Rican Jerigonza: (JER-3)

<table>
<thead>
<tr>
<th>Source Form</th>
<th>New Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>can.ción</td>
<td>cà.pàn.ció.pon</td>
</tr>
<tr>
<td>ma.és.tro</td>
<td>mà.pà.è.pes.tró.po</td>
</tr>
<tr>
<td>pájaro</td>
<td>pà. pà.jà.pa.rò.po</td>
</tr>
</tbody>
</table>

³ Orthographic ch stands for /χ/.
The formation of Jerigonza words constitutes a highly productive process. Absolutely every Spanish word, including function words, may be converted into Jerigonza, regardless the number of syllables or the stress pattern of the source form. The most evident feature of Jerigonza is lengthening. Through epenthesis, every Jerigonza word doubles the number of syllables of the source form. In JER-1, the locus of epenthesis is immediately to the right of every syllable boundary. In JER-2 epenthesis occurs immediately to the left of every syllable boundary and, in JER-3, the epenthetic syllable is placed immediately to the right of every syllable head. There is also variation on the segments that may form the epenthetic syllable. The nucleus of the epenthetic syllable may be any of the Spanish vowels: /a/, /e/, /i/, /o/, /u/, which may result from epenthesis or vowel copying. Several consonants may appear as the syllable onset, but they constitute a limited set: the voiceless stops /p/, /t/, /k/ and the affricate / парт/. To include all these possibilities, I will use $PV$ as an archi-form that subsumes all the realizations of the epenthetic syllable. So for instance, for the source form *canción* 'song', the possible Jerigonza forms are:

\[(18) \quad \begin{align*}
(\text{i}) & \quad \text{càn.} PV \text{.ción.} PV & \text{JER-1} \\
(\text{ii}) & \quad PV \text{.càn.} PV \text{.ción} & \text{JER-2} \\
(\text{iii}) & \quad \text{cà.} PVn \text{.ció.} PVn & \text{JER-3}
\end{align*}\]

4 The selection of the onset of the epenthetic syllable among the set /p, t, k, / is an unpredictable decision speakers make on the spur of the moment. At the beginning of the game, speakers may decide which one of these consonants they are going to use or they may stop the game to change the consonant later on. However, the fact that the onset of the epenthetic syllable may only be one of these segments does depend on linguistic factors that I will expose below.
These three patterns include all the prosodic properties of the language game. The main-stressed foot is always word-final as indicated by the location of primary stress, which always falls on either the penultimate or the ultimate syllable: \[ \ldots (\sigma' \sigma)_{\text{pwd}} \text{ or } \ldots (\sigma \sigma')_{\text{pwd}}. \] This depends on whether feet are left-headed (e.g. JER-1 and JER-3) or right-headed (e.g. JER-2). All syllables are exhaustively parsed into disyllabic feet as evinced by the fact that every other syllable to the left of the main-stressed syllable bears secondary stress (e.g. \[(\text{mà.PV})(\text{ès.PV})(\text{tó.PV})\] or \[(\text{PV.mà})(\text{PV.ès})(\text{PV.tó})\] < maestro). Feet are quantity-insensitive, which means that coda segments do not count for weight. Consequently, every foot must be disyllabic in order to be binary. The representations in (19) below illustrate this prosodic traits of Jerigonza. Note how every epenthetic PV-syllable serves as a filler that completes a disyllabic foot.

(19) a. Trochaic foot parsing: b. Iambic foot parsing:

![Diagram of foot parsing]

For this uniform foot structure to arise, several prosodic constraints must be at work. Exhaustive syllable parsing is demanded by \textsc{parse-syll} (McCarthy and Prince 1993b); binarity within the foot is required by \textsc{foot-bin} (Prince 1980, McCarthy and

(20) **PARSE-SYLL:**  
*Parse Syllables*  
All syllables must be parsed by feet.

(21) **FOOT-BIN(σσ):**  
*Syllabic Foot Binarity*  
Feet are binary under syllabic analysis.

(22) **ALIGN-HEAD-R:**  
*Align the Head of the PWd Right*  
Align the right edge of the main-stressed foot with the right edge of the PWd.

The data from all three varieties of Jerigonza indicate that FOOT-BIN(σσ), PARSE-SYLL and ALIGN-HEAD-R are unviolated. This means that they are top-ranking constraints that take precedence over any other. It should be noted that satisfaction of FOOT-BIN(σσ) and PARSE-SYLL requires that the optimal form contain an even number of syllables.

(23) **FOOT-BIN(σσ), PARSE-SYLL, ALIGN-HEAD-R**

<table>
<thead>
<tr>
<th>SF</th>
<th>FOOT-BIN(σσ)</th>
<th>PARSE-SYLL</th>
<th>ALIGN-HEAD-R</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[σ (σ′σ)]</td>
<td>* !</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>[(σ′σ′σ)]</td>
<td>* !</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>[(σ′σσ)]</td>
<td>* !</td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>[(σ′σ)(σσ)]</td>
<td>* !</td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>[(σσ)(σ′σ)]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All candidates that contain an odd number of syllables can not help falling in violation of PARSE-SYLL or FOOT-BIN(σσ) since the odd syllable would be either
unparsed (23a) or parsed by a non-binary foot (23b,c). Also, the main-stressed foot of the optimal Jerigonza form must be in word-final position. Otherwise, a violation of ALIGN-HEAD-R would arise (23d). Only a form that satisfies these three undominated prosodic constraints may be a well-formed Jerigonza item (23e).

2.4 Jerigonza as an instance of phonologically-conditioned morphology

Assuming that there is an output-to-output correspondence relationship that holds between a Source Form (SF) and Jerigonza (J), identity between SF and J is enforced by correspondence constraints. This kind of constraint serves to evaluate the identity between correspondent elements. For instance, MAX(SF-J) and DEP(SF-J) govern the identity between SF and J in terms of the number of correspondents.

(24) \textbf{MAX(SF-J):} \textit{Maximization of the Source Form}  
Every element in the source form (SF) has a correspondent in Jerigonza (J).

(25) \textbf{DEP(SF-J):} \textit{Dependence on the Source Form}  
Every element in Jerigonza (J) has a correspondent in the Source Form (SF).

For every element in SF that lacks a correspondent in J, a violation of MAX(SF-J) is counted. Similarly, every element in J lacking a correspondent in SF constitutes a violation of DEP(SF-J). Given that there are different kinds of correspondent elements (e.g. segments, morae, syllables, etc.), these correspondence constraints may have
different versions. \( \text{MAX}(\text{SF-J}, \sigma) \) and \( \text{DEP}(\text{SF-J}, \sigma) \), for example, evaluate the identity between SF and J in terms of the number of syllables.

(26) \( \text{MAX}(\text{SF-J}, \sigma): \) **Syllabic Maximization of the Source Form**

Every syllable in the source form (SF) has a correspondent in Jerigonza (J).

(27) \( \text{DEP}(\text{SF-J}, \sigma): \) **Syllabic Dependence on the Source Form**

Every syllable in Jerigonza (J) has a correspondent in the Source Form (SF).

It was pointed out above that the most evident change from SF to J is the systematic increase in the number of syllables. J always has twice as many syllables as SF. JER-1, JER-2 and JER-3 are identical in regards to this property.

(28) \[
\begin{array}{ccc}
\text{SF} & \text{J} \\
\sigma & = 1 & \sigma \sigma & = 2 \\
\sigma \sigma & = 2 & \sigma \sigma \sigma \sigma & = 4 \\
\sigma \sigma \sigma \sigma & = 3 & \sigma \sigma \sigma \sigma \sigma \sigma \sigma & = 8 \\
\sigma \sigma \sigma \sigma \sigma & = 4 & \sigma \sigma \sigma \sigma \sigma \sigma \sigma \sigma \sigma & = 10 \\
\sigma \sigma \sigma \sigma \sigma \sigma & = 5 & \sigma \sigma \sigma \sigma \sigma \sigma \sigma \sigma \sigma \sigma \sigma \sigma & = 12 \\
\text{etc.}
\end{array}
\]

According to this, the constraint \( \text{MAX}(\text{SF-J}, \sigma) \) is undominated since it is never the case that a syllable in SF is deprived of a correspondent in J. On the other hand, the constraint \( \text{DEP}(\text{SF-J}, \sigma) \) must be dominated given that J always has a greater number of syllables than the original number present in SF. In order to determine what is causing these violations of the constraint \( \text{DEP}(\text{SF-J}, \sigma) \), I would like to point out a consistent
pattern for every Jerigonza variety. In JER-1, the leftmost segment of every syllable in SF corresponds to the leftmost element of a foot in J.

\[(29)\]  \
\[
\begin{array}{c}
\text{sól} \\
\text{es.} \\
\text{cúl.} \\
\text{tor}
\end{array}
\]

Source form

\[
[(\text{sól.PV})] \\
[(\text{es.PV})(\text{cul.PV})(\text{tór.PV})]
\]

Jerigonza

'\text{sun}'

'sculptor'

In JER-2, the rightmost segment of every syllable in SF corresponds to the rightmost element of a foot in J.

\[(30)\]  \
\[
\begin{array}{c}
\text{sól} \\
\text{es.} \\
\text{cúl.} \\
\text{tor}
\end{array}
\]

Source Form

\[
[(\text{PV.sól})] \\
[(\text{PV.ès})(\text{PV.cúl})(\text{PV.tór})]
\]

Jerigonza

In JER-3, both the leftmost and the rightmost segments of a syllable in SF correspond to the respective edgemost elements of a foot in J.

\[(31)\]  \
\[
\begin{array}{c}
\text{sól} \\
\text{es.} \\
\text{cúl.} \\
\text{tor}
\end{array}
\]

Source Form

\[
[(\text{só.PVl})] \\
[(\text{ePVs})(\text{cu.PVl})(\text{tó.PVr})]
\]

Jerigonza

I propose to capture these patterns through the following ANCHORing constraints, which target the peripheries of the prosodic constituents syllable and foot.

\[(32)\] ANCHOR(σ)L:  

\text{Anchor Syllables Left}

The leftmost element of a syllable in SF corresponds to the leftmost element of a foot in J.

\[(33)\] ANCHOR(σ)R:  

\text{Anchor Syllables Right}

The rightmost element of a syllable in SF corresponds to the rightmost element of a foot in J.
In order to satisfy either of these ANCHORing constraints, J must provide a foot for the correspondent of every syllable in SF. Nevertheless, J may not project just any type of foot because foot structure is governed by undominated well-formedness constraints such as FOOT-BIN(σσ). The only possible way in which the optimal candidate may satisfy ANCHOR(σ) without violating FOOT-BIN(σσ) is if it adds an epenthetic syllable for every syllable in SF. These remarks lead to conclude that ANCHOR(σ) and FT-BIN(σσ) conspire to force epenthesis in Jerigonza through their domination of the constraint DEP(SF-J, σ).

In JER-1, the specific ranking involving these constraints is ANCHOR(σ)L, FT-BIN(σσ) >> DEP(SF-J, σ). This ranking explains why, in Colombian Jerigonza, the epenthetic syllable must follow the correspondent of every syllable in SF. If the epenthetic syllable were to precede, it would preclude satisfaction of ANCHOR(σ)L.

(34)  ANCHOR(σ)L, FT-BIN(σσ) >> DEP(SF-J, σ)

<table>
<thead>
<tr>
<th>SF:</th>
<th>ANCHOR(σ)L</th>
<th>FT-</th>
<th>DEP(SF-J, σ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ([sol])</td>
<td></td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>b. [sol.PV]</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>c. [(PV.sol)]</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Candidate (34a) is ruled by FT-BIN(σσ) because it contains a monosyllabic foot. Candidates (34b) and (34c) both manage to satisfy FT-BIN(σσ) by adding an epenthetic syllable. This is at the affordable cost of violating low-ranking DEP(SF-J, σ). But it is (34b) that is selected as optimal for it not only complies with FT-BIN(σσ) but it also anchors the leftmost segment of the syllable in SF with the left edge of a foot. However,
two other candidates need be considered here: [(so.lV)], which parses the coda segment of the sf-syllable as the onset of a J-syllable; and [(so.PVl)], which preserves the syllabic role of all sf-segments but sacrifices their contiguity within the syllable. The following constraints participate in the evaluation to rule these candidates out.

(35) **ST-ROLE:**  
**Structural Role**

A segment in SF and its correspondent in J must have identical syllabic roles.

(36) **O-CONTIG(σ):**  
**Syllabic Output Contiguity**

The segments of a syllable in J standing in correspondence with the segments of a syllable in SF form a contiguous string.

The function of ST-ROLE and O-CONTIG(σ) is to preserve the integrity of the syllable. In JER-1, these constraints are undominated since SF-syllables are never broken up nor do their segments change their syllabic roles. Candidates (37d) and (37e) below are ruled out by O-CONTIG(σ) and ST-ROLE, respectively, for incurring this kind of violations.

(37) **ST-ROLE, O-CONTIG(σ), ANCHOR(σ)L, FT-BIN(σσ) >> DEP(SF-J, σ)**

<table>
<thead>
<tr>
<th>SF: [sol]</th>
<th>St-ROLE</th>
<th>O-CONT(σ)</th>
<th>ANCH(σ)L</th>
<th>FT-BIN(σσ)</th>
<th>DEP(SF-J, σ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [sol]</td>
<td></td>
<td></td>
<td></td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>b. [sol.PV]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>c. [PV.sol]</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>d. [so.PVl]</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>e. [so.lV]</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>
Note that when SF has an even number of syllables, epenthesis is still necessary given that anchoring applies to the correspondent of every single syllable in SF and every foot in J must be disyllabic.

(38) \text{ANCHOR(σ)L, Ft-Bin(σσ) >> Dep(SF-J, σ)L}

<table>
<thead>
<tr>
<th>SF:</th>
<th>[can.(ción)]</th>
<th>ANCHOR(σ)L</th>
<th>Ft-Bin(σσ)</th>
<th>Dep(SF-J, σ)L</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [(can)(cion)]</td>
<td>* ! *</td>
<td>* !</td>
<td>* !</td>
<td>* !</td>
</tr>
<tr>
<td>b. [(can.cion)]</td>
<td>* !</td>
<td>* !</td>
<td>* !</td>
<td>* !</td>
</tr>
<tr>
<td>c. [(PV.can)(PV.cion)]</td>
<td>* ! *</td>
<td>* ! *</td>
<td>* ! *</td>
<td>* ! *</td>
</tr>
<tr>
<td>d. [(PV.can)(cion.PV)]</td>
<td>* !</td>
<td>* !</td>
<td>* !</td>
<td>* !</td>
</tr>
</tbody>
</table>

Candidate (38a) provides a foot for the correspondent of every syllable in SF. This enables it to satisfy ANCHOR(σ)L, but given that these feet are monosyllabic, Ft-Bin(σσ) rules it out. Candidate (38b) opts for complying with Ft-Bin(σσ) by parsing both syllables into a single foot. The problem is that with a single foot in J, only one of the two syllables in SF may be properly anchored. This results in a violation of ANCHOR(σ)L. Candidates (38c) and (38b) satisfy Ft-Bin(σσ) by adding epenthetic syllables, but then again, only when these epenthetic syllables do not take over the left periphery of the foot may ANCHOR(σ)L be satisfied (38d).

In JER-2, the active anchoring constraint is ANCHOR(σ)R. Peruvian Jerigonza is just the mirror image of Colombian Jerigonza. In JER-2, epenthetic syllables may not appear at the right periphery of any feet in J because that would preclude right anchoring (39b). This is illustrated in the following tableau.
In JER-3, both Anchoring constraints are top-ranking. Anchor(σ)\text{l} and Anchor(σ)\text{r} ban all epenthetic material from both edges of the foot. In order to satisfy both types of Anchoring, epenthetic segments must intrude into the boundaries of the original syllables in SF, which indicates that Anchor(σ)\text{l/r} dominate O-Contig(σ). Ft-Bin(σσ) must also outrank O-Contig(σ) given that the properly anchored disyllabic foot is created at the cost of splitting the syllable (40d).

This analysis shows that Infixing Ludlings are governed by prosodic constraints.

The infix results from a conspiracy between the prosodic constraints Anchor(σ) and Ft-
$\text{BIN}(\sigma \sigma)$ against the correspondence constraint $\text{DEP}(\text{SF}-\text{J}, \sigma)$. The ranking $\text{ANCHOR}(\sigma)$, $\text{FT-BIN}(\sigma \sigma) > \text{DEP}(\text{SF}-\text{J}, \sigma)$ reflects the fact that achieving uniform disyllabic footing is more important than maintaining strict ($\text{SF-J}$)-Identity. Under this proposal, the differences in the site of epenthesis among JER-1, JER-2 and JER-3 are derived from a single general principle rather than stipulated in three different unrelated rules. $\text{ANCHOR}(\sigma)$ is directly responsible for the locus of epenthesis. In JER-1, top-ranking $\text{ANCHOR}(\sigma)L$ pushes epenthetic material away from the left periphery of the foot. In JER-2, $\text{ANCHOR}(\sigma)R$ causes the same effect on the right periphery of the foot. In JER-3, the two versions of $\text{ANCHOR}(\sigma)$ work together to bar epenthetic material from both foot edges.

The fact that Jerigonza is sensitive to syllable edges may be used to shed light on a non-obvious case of syllabification in Spanish. When /s/ is flanked by consonants (e.g. *perspicaz* 'sly'), there are two ways in which this segment could be parsed: (i) as part of the coda of the preceding syllable (e.g. *pers.pi.caz*) or (ii) as part of the onset of the following syllable (e.g. *per.spi.caz*). Consider the following data.

\[
\begin{array}{llll}
| SF & J | \\
|-----|-----|-----|
| perspicaz & pers.PV.pi.PV.caz.PV & JER-1 & 'sly' \\
| & PV.pers.PV.pi.PV.caz & JER-2 \\
| & pe.PVrs.pi.PV.ca.PVz & JER-3 \\
| transporte & trans.PV.por.PV.te.PV & JER-1 & 'transportation' \\
| & PV.trans.PV.por.PV.te & JER-2 \\
| & tra.PVns.po.PVr.te.PV & JER-3 \\
\end{array}
\]
The site of epenthesis in these examples indicates that the actual parsing of inter-consonantal /s/ is under the coda of the preceding syllable. The absence of Jerigonza forms where the epenthetic syllable is placed right before /s/ (e.g. PV.sC) is to be expected under the assumption that inter-consonantal /s/ is parsed as the coda of a syllable in SF. Candidates such as JER-1 per.PV.spi.PV.caz.PV, JER-2 PV.per.PV.spi.PV.caz, and JER-3 pe.PVr.spi.PV.ca.PVz, where /s/ is parsed as the onset of the following syllable, are ruled out by ANCHOR(σ) given that such parsing of /s/ prevents that the edgemost segment of one of the syllables of SF from corresponding to the edgemost element of a foot in J (42b).

(42) ANCHOR(σ)L, Ft-Bin(σσ) >> Dep(SF-J, σ)L

<table>
<thead>
<tr>
<th>SF:</th>
<th>pers.pi.caz</th>
<th>ANCHOR(σ)L</th>
<th>Ft-Bin(σσ)</th>
<th>Dep(SF-J, σ)L</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>(∅)</td>
<td></td>
<td></td>
<td>***</td>
</tr>
<tr>
<td>b.</td>
<td>[(per.PV)(spi.PV)(caz.PV)]</td>
<td>*!</td>
<td></td>
<td>***</td>
</tr>
</tbody>
</table>

2.4.1 Prosodic dependence on the source form

Regardless the site of epenthesis, epenthetic syllables may not be foot heads. In Jerigonza, that prosodic role is reserved for those syllables that do have correspondents in SF. To account for this, I incorporate a proposal made by Alderete (1995). This author observes that the projection of prosodic heads may be input-dependent. That is, only segments that have a correspondent in the input may be parsed under a prosodic head in the output. HEAD(PCat)DEP is the general form of this constraint defined below.

(43) HEAD(PCat)DEP: Prosodic Head Dependence

Every segment contained in prosodic head PCat in S2 has a correspondent in S1.
There are different forms of HEAD-Dep depending on what prosodic category is relevant. The data in (44) below show that, in Jerigonza, the foot is the prosodic category whose head is input-dependent. Whether the foot is left or right-headed, the foot head is always a syllable whose segments have correspondents is SF. Foot heads are tonic syllables that receive prominence through stress. Primary stress for the head of the main-stressed foot and secondary stress for the heads of all other feet.

(44)  

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>JER-1</td>
<td>SF</td>
<td>J</td>
<td>Gloss</td>
</tr>
<tr>
<td></td>
<td>pán</td>
<td>[(pán.PV)]</td>
<td>'bread'</td>
</tr>
<tr>
<td></td>
<td>már.mol</td>
<td>[(már.PV)(mól.PV)]</td>
<td>'marble'</td>
</tr>
<tr>
<td></td>
<td>prés.ta.mos</td>
<td>[(près.PV)(tá.PV)(mós.PV)]</td>
<td>'loans'</td>
</tr>
</tbody>
</table>

JER-2  

| pán    | [(PV.pán)] | 'loans' |
| már.mol | [(PV.már)(PV.mól)] |   |
| prés.ta.mos | [(PV.prés)(PV.tá)(PV.mós)] |   |

JER-3  

| pán    | [(pá.PVn)] |   |
| már.mol | [(má.PVr)(mó.PVl)] |   |
| prés.ta.mos | [(prè.PVš)(tá.PV)(mó.PVš)] |   |

Based on these patterns, I propose that the version of HEAD-Dep that is active in Jerigonza is HEAD(Ft)Dep, as defined below.

(45)  HEAD(Ft)Dep: Prosodic Head (Foot) Dependence

Every segment contained in the head of a foot (e.g. a tonic syllable) in S2 has a correspondent in S1.

If PCat is a prosodic head in S2, and PCat contains β, then β ∈ Range(ℜ).
Although \textsc{Head(Ft)Dep} is always satisfied in Jerigonza this is not without conflict. \textsc{Foot-Form} is an independent prosodic constraint that determines headness within the foot regardless of the input. There are two versions of this constraint defined as follows.

(46) $\textsc{Ft-Form(Tr)}$: \begin{quote} \textit{Trochaic Foot Form} \\
Align (Ft, L, H(Ft), L) \\
Align the left edge of a foot with the left edge of its head (e.g. a tonic syllable). \end{quote}

(47) $\textsc{Ft-Form(Iam)}$: \begin{quote} \textit{Iambic Foot Form} \\
Align (Ft, R, H(Ft), R) \\
Align the right edge of a foot with the right edge of its head (e.g. a tonic syllable). \end{quote}

Except for \textsc{Jer-2}, iambic feet do not arise in Spanish.\textsuperscript{5} There is almost unanimous consensus that footing in Spanish is trochaic (Harris 1969, 1983, 1989, 1992; Morgan, 1984; Dunlap, 1991; Prieto 1992a,b; Crowhurst, 1992a,b; Rosenthal, 1994; Lipsky, 1996, among others) and this is the type of foot I have consistently found in all of the processes examined here except for the case of \textsc{Jer-2}. According to this, the active role of $\textsc{Ft-Form(Tr)}$ in Spanish is unquestionable, whereas the active role of $\textsc{Ft-Form(Iam)}$ is still to be proven. The stand I assume here is that \textsc{Jer-2} does not constitute evidence in support of the claim that $\textsc{Ft-Form(Iam)}$ is an active constraint in Spanish. This is because, as I demonstrate below, the iambic feet of \textsc{Jer-2} can be derived from the interaction of $\textsc{Ft-Form(Tr)}$ with the constraints $\textsc{Head(Ft)Dep}$ and $\textsc{Anchor(}\sigma\text{)R}$.

\textsuperscript{5} Roca (1990) is the only proposal to analyze Spanish feet as iambic. However, as demonstrated by Harris (1983), Dunlap (1991), Rosenthal (1994) and Lipsky (1996), the patterns of Spanish stress are more satisfactorily accounted for by an analysis that posits trochaic feet.
The effect of FT-FORM(Tr) is that the first syllable within the foot should be the prominent one. Although they are not directly antagonistic, FT-FORM(Tr) is led into conflict with HEAD(Ft)Dep when the dominant anchoring constraint is ANCHOR(σ)R. Such is exactly the case of JER-2 (e.g. \textit{PV} pán $<$ pán 'bread), where ANCHOR(σ)R forces \text{J} to have the correspondents of all syllables in SF appear at the right periphery of some foot. With that state of affairs, FT-FORM(Tr) would dictate that the syllable that is at the left periphery of the foot (e.g. the epenthetic PV-syllable) be prominent. This, however, runs afoul of the demands of HEAD(Ft)Dep, which favors the non-epenthetic syllable regardless of its position within the foot. Given that the conflict is resolved in favor of ANCHOR(σ)R and HEAD(Ft)Dep, these constraints must dominate FT-FORM(Tr).

\[(48) \quad \text{ANCHOR}(\sigma)R, \text{ HEAD}(Ft)Dep \gg \text{ FT-FORM}(Tr)\]

<table>
<thead>
<tr>
<th>SF: pán</th>
<th>ANCHOR(σ)R</th>
<th>HEAD(Ft)Dep</th>
<th>FT-FORM(Tr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (pán.PV)]</td>
<td>* !</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. [(pan. PV)]</td>
<td>* !</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>c. [PV.pán)]</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>d. [(PV. pan)]</td>
<td>* !</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Candidates (48a) and (48b) are ruled out by ANCHOR(σ)R since they have the epenthetic syllables placed exactly where the correspondents of SF-syllables need appear in order to achieve right anchoring. Candidates (48c) and (48d) are both able to satisfy ANCHOR(σ)R by placing each epenthetic syllable at the left margin of a foot. However, candidate (48c) has the advantage that it is a non-epenthetic syllable that is prominent within each foot in compliance with HEAD(Ft)Dep. According to this, ANCHOR(σ)R and
HEAD(Ft)Dep are directly responsible for the iambic stress pattern of JER-2. Even though candidate (48c) contains a right-headed foot, which is quite bizarre for Spanish, it is selected as optimal because it is the only form that abides by both ANCHOR(σ)R and HEAD(Ft)Dep. My analysis derives the iambic feet of JER-2 from constraint interaction rather than invoking the constraint Ft-FORM(Iam). Note that if Ft-FORM(Iam) were actually active, we would expect to see its effects surface somewhere else. However, iambic feet only arise when faithfulness to the head of an sf-foot is required.

In JER-1, where ANCHOR(σ)L is top-ranking, Ft-FORM(Tr) does not need be violated to satisfy HEAD(Ft)Dep since the correspondents of all syllables in sf must sit at the left periphery of a foot in J, exactly where Ft-FORM(Tr) requires the prominent syllable to be (49a). The closest competitor is candidate (49b) but it is discarded by HEAD(Ft)Dep because the segments PV that form the tonic syllable do not have correspondents in sf.

(49)  ANCHOR(σ)L, HEAD(Ft)Dep >> Ft-FORM(Tr)

<table>
<thead>
<tr>
<th>SF: pán</th>
<th>ANCHOR(σ)L</th>
<th>HEAD(Ft)Dep</th>
<th>Ft-FORM(Tr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [pán.PV]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. [pan. P̂V]</td>
<td></td>
<td>* ! *</td>
<td></td>
</tr>
<tr>
<td>c. [(P̂V.pán)]</td>
<td>* !</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>d. [(PV. pan)]</td>
<td>* !</td>
<td></td>
<td>**</td>
</tr>
</tbody>
</table>

The case of JER-3 is basically the same as JER-1, except for the fact that, since both ANCHORing constraints are top-ranking, contiguity within the syllable may not be salvaged. This, however, does not prevent HEAD(Ft)Dep from being strictly obeyed. In
tableau (50) below, candidate (50c) is optimal because it is the only one that complies with ANCHORing and HEAD(Ft)DEP. Note that, even though the tonic syllable is not identical to its SF-corrrespondent, no violation of HEAD(Ft)DEP is incurred because the two segments parsed under it (e.g. /p/, /a/) have correspondents in SF.

(50) ANCHOR(σ)L, ANCHOR(σ)R, HEAD(Ft)DEP >> Ft-FORM(Tr)

<table>
<thead>
<tr>
<th>SF:</th>
<th>pán</th>
<th>ANCH(σ)L</th>
<th>ANCH(σ)R</th>
<th>HEAD(Ft)DEP</th>
<th>Ft-FORM(Tr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[(pán.PV)]</td>
<td></td>
<td>* !</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>[(PV.pán)]</td>
<td></td>
<td>* !</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>[(pá.PVn)]</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>d.</td>
<td>[(pa.PVn)]</td>
<td></td>
<td></td>
<td>* ! *</td>
<td></td>
</tr>
</tbody>
</table>

It should be stressed that the role played by HEAD(Ft)DEP is essential to ensure that the listener will understand the message. The task of decoding the disguised word is made possible by making prominent only those syllables originally present in SF. The listener is able to reconstruct the original Spanish word by screening out the non-prominent syllables. The original string in SF is restored by putting together all prominent syllables in J, as sketched in (51).

(51) Trochaic footing: Iambic footing:

près.PV.tà.PV.mós.PV

PV.près.PV.tà.PV.mós 'loans'

pres — ta — mos

pres—ta—mos

PV PV PV

PV PV PV
2.4.2 Intrusive elements

Within the frame of this dissertation, one of the most interesting properties of Jerigonza is the fact that some segments that are contiguous in SF may have correspondents that are not contiguous in J. CONTIGUITY is another correspondence constraint that enforces identity between two forms. As all correspondence constraints, CONTIGUITY is bi-directional, which gives rise to two different forms of the constraint.

\[ \text{(52) CONTIGUITY: (McCarthy and Prince, 1995: 371)} \]

\[ \text{I-CONTIG: Input Contiguity ("No Skipping")} \]

The portion of S1 standing in correspondence forms a contiguous string.

Domain (D) is a single contiguous string in S1.

\[ \text{(53) O-CONTIG: Output Contiguity ("No Intrusion")} \]

The portion of S2 standing in correspondence forms a contiguous string.

Range (ℜ) is a single string in S2.

In Jerigonza, S1 and S2 correspond to SF and J, respectively. Given that J never skips any elements in SF, I-CONTIG must be top-ranking. But since J usually contains intrusive elements, O-CONTIG must be dominated.

\[ \text{(54) O-CONTIGUITY violations:} \]

\[
\begin{array}{c}
\sigma_1 \quad \sigma_2 \quad \sigma_3 \\
\text{c o . m i . d a} \\
\end{array}
\quad \text{Source form} \quad 'food' \\
\begin{array}{c}
\sigma_1 \quad \sigma_a \quad \sigma_2 \quad \sigma_b \quad \sigma_3 \quad \sigma_c \\
\text{c o . P V . m i . P V . d a . P V} \\
\end{array}
\quad \text{Jerigonza}
\]
In (54), the correspondents of the syllables $\sigma_1$, $\sigma_2$, and $\sigma_3$ in SF are separated by the epenthetic syllables $\sigma_a$ and $\sigma_b$ in J. Likewise, on the melodic tier, the segments parsed by these syllables in SF are interrupted by epenthetic PV-segments in J. These violations of the constraint $O$-CONTIGUITY are necessary to comply with ANCHOR($\sigma$) and FT-BIN($\sigma\sigma$).

The epenthetic syllables in J may not appear as a string that precedes or follows the correspondents of those syllables present in SF (e.g. *[σσσσσσ] or *[σσσσσσ] ) because that would not allow proper anchoring, despite the fact that there is an even number of syllables that permits disyllabic footing. Instead, epenthetic syllables are forced to appear discontinuously because each one of them must pair up with the correspondent of an SF-syllable in order to satisfy both anchoring and foot binarity (e.g. [(σ σ)(σ σ)(σ σ)] or [(σ σ)(σ σ)(σ σ)] ). ANCHOR($\sigma$) and FT-BIN($\sigma\sigma$) are then the constraints that dominate $O$-CONTIGUITY.

(55)  FT-BIN($\sigma\sigma$), ANCHOR($\sigma$L), ANCHOR($\sigma$)R $>>$ O-CONTIG
Tableau (55) illustrates the interaction of these constraints with data from JER-3. The more syllables SF has, the more violations of O-CONTIGUITY need be incurred. These examples show that the optimal output form is never the one that preserves the best CONTIGUITY but always the one that best complies with anchoring and foot binarity. In order to satisfy these dominant principles, some degree of CONTIGUITY must be sacrificed. This is the reason why Infixed Ludlings contain infixed material. A Spanish word, which represents a free morpheme, is changed to meet a particular prosodic form. For this to be possible, the segments that constitute the exponence of that morpheme must have some discontinuous correspondents in the new output form. Jerigonza is an instance of this type of non-concatenative morphology where prosodic constraints are satisfied to the detriment of faithfulness constraints.

2.4.3 The make-up of epenthetic syllables

Not all of the segments that form the epenthetic syllables in SF originate from epenthesis. Whereas in JER-2, both the onset and the nucleus of every epenthetic syllable lack correspondents in SF (e.g. \textit{cha ès.cha.cul.cha.tór} < \textit{escultor} 'sculptor'), in JER-1 (e.g.
ès.pe.cül.pu.tór.po < escultor) and JER-3 (e.g. èpes.cù.pul.tór.por < escultor), only the onset lacks an SF-correspondent because the nucleus is a copy of some vocalic segment present in SF. In order to account for inserted and copied segments, other correspondence constraints are necessary.

(56) MAX(SF-J, seg):  **Segmental Maximization of the Source Form**
Every segment in the source form (SF) has a correspondent in Jerigonza (J).

(57) DEP(SF-J, seg):  **Segmental Dependence on the Source Form**
Every segment in Jerigonza (J) has a correspondent in the Source Form (SF).

(58) INTEGRITY:  ('No Breaking’)
No element in the Source Form (SF) has multiple correspondents in Jerigonza (J).

Violations of MAX(SF-J, seg) occur whenever a segment in SF lacks a correspondent in J. Conversely, violations of DEP(SF-J, seg) occur whenever a segment in J lacks a correspondent in SF. Since it is always the case that all segments in SF have a correspondent in J (e.g. mar.PV < mar 'sea'), the constraint MAX(SF-J, seg) must be undominated. However, since every epenthetic syllable in J always contains at least one segment that has no correspondent in SF (e.g. a voiceless stop consonant, /P/), the constraint DEP(SF-J, seg) must be dominated.

As far as INTEGRITY is concerned, every instance of two segments in J that share a single correspondent in SF counts as a violation of this constraint.
In (59), SF contains three segments whereas J contains a total of five. This discrepancy in the number of segments would usually be interpreted as two violations of Dep(SF-J, seg). But in actuality, there is only one segment in J that lacks a correspondent in SF (e.g. /p₄/) because the two vocalic segments in J (e.g. /a₂/ and /a₅/) share the same correspondent in SF (e.g. /a₂/). According to this, in the varieties that exhibit vowel-copying (e.g. JER-1 and JER-3), the nucleus of every epenthetic syllable should be computed as an Integrity violation. The question is: what is causing these violations of the constraints Integrity and Dep(SF-J, seg)?

It was established above that the partial ranking Anchor(σ), Ft-Bin(σσ) >> Dep(SF-J, σ) causes J to add an epenthetic syllable for every SF-syllable correspondent. These new syllable nodes are subject to several well-formedness constraints that regulate syllabic form. Two of these constraints are defined below.

(60) **Nucleus:** A syllable must have a nucleus.

(61) **Onset:** A syllable must have an onset.

In order to meet these conditions, every new syllable node in J must dominate at least two segments: a consonant that acts as onset and a vowel that serves as nucleus. Let us focus on the syllable onset first.
The fact that for every epenthetic syllable in J, an epenthetic onset segment is
inserted indicates that Onset dominates Dep(sf-J, seg). That is to say that compliance
with syllabic well-formedness is more important than (sf-J)-Identity. Tableau (57) below
illustrates the interaction of these constraints with the example casa 'house'.

(62) Onset >> Dep(sf-J, seg)

<table>
<thead>
<tr>
<th>SF:</th>
<th>Onset</th>
<th>Dep(sf-J, seg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>c á s a</td>
<td></td>
<td><em>!</em></td>
</tr>
<tr>
<td>a. σ σ σ σ</td>
<td></td>
<td>P P</td>
</tr>
<tr>
<td>c á a s á a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. σ σ σ σ</td>
<td></td>
<td>P P</td>
</tr>
<tr>
<td>c á P a s á P a</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The optimal form, (62b), violates the constraint Dep(sf-J, seg) twice because it
contains two segments that do not have correspondents in SF. These violations, however,
are tolerated in the optimal candidate because they are necessary to comply with higher-
ranking Onset. In regards to the selection of the onset segment, the fact that the only
consonants that may appear as the onset of the epenthetic syllable are /p, t, k, ≠/ suggests
that voiceless stops are more suitable onsets than other segments. In order to account for
this, I follow Colina (1995) in her proposal of a syllable-margin hierarchy for Spanish,
which she bases on the original proposal by Prince and Smolensky (1993).

(63) Spanish Syllable-Margin Hierarchy:
* M/a,e,o,i,u >> * M/r,l >> * M/m,n,ń >> * M/f,s,θ, ħ,x >> * M/b,d,g >> M/p,t,k, ≠
This hierarchy states that vowels, the most sonorous segments, make the worst syllable margins, whereas obstruents, which are the least sonorous segments, make optimal syllable margins. Colina also proposes that, for Spanish, the affinity cut is between /l/ and /i/, which means that any segment that has the sonority of /l/ or lower is margin-preferring and any segment that has the sonority of /i/ or higher is peak-preferring. I claim that, in Jerigonza, the segments /p, t, k, ≠/ may be the onset of epenthetic syllables because ONSET dominates *M/p, *M/t, *M/k and *M/≠ whereas the rest of margin constraints outrank ONSET. This means that it is better to provide syllables with onsets even if doing so requires violating the anti-associational constraints that prohibit /p/, /t/, /k/ and /≠/ to be syllable margins. ONSET, however, is outranked by the rest of anti-associational constraints that prohibit other Spanish segments to be syllable margins (e.g. *M/r,l, *M/m,n,ñ, *M/f,s,θ, ĵ, x, *M/b,d,g, etc.). It is important to point out that the ranking *M/r,l >> *M/m,n,ñ >> *M/f,s,θ, ĵ, x, >> *M/b,d,g >> ONSET >> *M/p,t,k,≠ is consistent with universal sonority principles as they interact with syllable structure. That is, the least sonorous consonants make the best syllable margins. According to this, the tendency observed in Jerigonza is to favor lower-sonority segments so that the epenthetic syllables have optimal onsets. Tableau (64) below illustrates how this ranking accounts for the limited set of segments that are tolerated as the onset of epenthetic syllables. The decision of exactly what segment of the set /p, t, k, ≠/ is to be

---

6 Based on their sonority, the hierarchy in (63) captures the 'willingness' of Spanish segments to be parsed as syllable margins. Whether a segment is parsed as the left or right margin of the syllable, does not depend solely on this hierarchy but on its interaction with syllabic well-formedness constraints such as *COMPLEX-ONSET, ONSET, *COMPLEX-CODA, NO-CODA, CODA-CONDITION.
used is however, totally unpredictable. It depends entirely on an agreement Jerigonza speakers make before starting the game, and once the game has started and a segment has been chosen, they may stop the game at any time to switch to another segment from the set /p, t, k, /.

(64)  \[ *\text{M/r,l} >> *\text{M/m,n,ñ} >> *\text{M/f,s,}\bar{\text{j}},x >> *\text{M/b,d,g} >> \text{ONSET} >> *\text{M/p,t,k,}\neq \]

<table>
<thead>
<tr>
<th>SF:</th>
<th>[(cá.sa)]</th>
<th>*\text{M/r,l}</th>
<th>*\text{M/m,n,ñ}</th>
<th>*\text{M/f,s,}\bar{\text{j}},x b,d,g</th>
<th>ONSET</th>
<th>*\text{M/p,t,k,}\neq</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[(cá.rV)(sá.rV)]</td>
<td><em>!</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>[(cá.mV)(sá.mV)]</td>
<td></td>
<td><em>!</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>[(cá.fV)(sá.fV)]</td>
<td></td>
<td><em>!</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>[(cá.V)(sá.V)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>[(cá.tV)(sá.tV)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><em>!</em></td>
</tr>
</tbody>
</table>

Candidate (64d) is ruled out because it contains two onsetless syllables that run afoul of ONSET. Even though syllables must have onsets, not any segment is allowed to be parsed in that position. Parsing a voiced stop, fricative, nasal or liquid as onset contravenes the dominant anti-associational constraints *\text{M/f, s, }\bar{\text{j}},x/ and *\text{M/b,d,g}/ (64c), *\text{M/m,n,ñ}/ (64b) and *\text{M/r,l}/ (64a). But given that *\text{M/p,t,k,}\neq is outranked by ONSET, any segment of this set may be parsed as a syllable margin (64e). In sum, the partial ranking ONSET >> \text{DEP(SF-J, seg)} accounts for the fact that the onset of epenthetic syllables is an epenthetic segment. The ranking *\text{M/r,l} >> *\text{M/m,n,ñ} >> *\text{M/f,s,}\bar{\text{j}},x >> *\text{M/b,d,g} >> \text{ONSET} >> *\text{M/p,t,k,}\neq relies on universal sonority considerations to account for the tendency to prefer voiceless stops as the epenthetic segment that fills that position.
David Odden pointed out to me that OCP violations might have an effect on the selection of the onset segment in cases where the epenthetic consonant ends up being adjacent to a segment of similar make-up. For instance, in JER-1, if speakers choose to use /t/ as the epenthetic consonant, the source form [so.sje.dád] 'society' may be expected to give rise to [sò.to.sjè.te.dád.pa] rather than [sò.to.sjè.te.dád.ta] in order to avoid the homorganic sequence [dt]. As a result, the fixed consonant would become 'unfixed' in order to satisfy a constraint such as the OCP. Nevertheless, the data I have collected from the three Jerigonza varieties show that OCP violations do not force to change the selected consonant. The fact that [so.sje.dád] generates [sò.to.sjè.te.dád.ta], despite the OCP violation, suggests that the OCP is not active here.

Concerning the nucleus, the selection of the optimal nuclear segment is also based on sonority considerations. Here again, I follow Colina (1995) in her proposal of a syllable-peak hierarchy for Spanish, based again on the one proposed by Prince and Smolensky (1993).

(65) Spanish Syllable-Peak Hierarchy:

\[ *P/\#,p,t,k \gg *P/b,d,g \gg *P/f,s,\emptyset,j,x \gg *P/m,n,\emptyset \gg *P/l,r \gg *P/i,u,e,o,a \]

This hierarchy states that parsing a consonantal segment as a syllable peak is more costly than parsing any vocalic segment in that position. Vowels make better syllable peaks than consonants because of their higher sonority. In Jerigonza, any of the Spanish vowels, /a, e, i, o, u/, may fill the nucleus of the epenthetic syllable because the
well-formedness constraint NUCLEUS dominates the syllable-peak associational constraints *P/a, *P/e,o and *P/i,u. On the other hand, all consonantal segments are barred from nuclear position because the associational constraints *P/≠, p, t, k, b, d, g, f, s, θ, j x; *P/m, n, ŭ and *P/l, r outrank NUCLEUS. Using the example arbol 'tree' in JER-2, tableau (66) shows that although epenthetic syllables must have a nucleus (66c), not any segment may be parsed in that position (66a-b). Only vowels, the most sonorous segments of the language, may be syllable nuclei (66d).

(66) *P/≠, p, t, k, b, d, g, f, s, θ, j, x >> *P/m, n, ŭ, l, r >> NUCLEUS >> *P/i, u, e, o, a

<table>
<thead>
<tr>
<th>SF:</th>
<th>*P/≠, p, t, k, b, d, g, s, θ, j, x</th>
<th>*P/m, n, ŭ, l, r</th>
<th>NUCLEUS</th>
<th>*P/i, u, e, o, a</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>T  a  r  b  o  l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>T  a  r  b  o  l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>T  a  r  b  o  l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>T  i  a  r  b  o  l</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

JER-2, differs from JER-1 and JER-3 in the fact that the segment that fills the nucleus of the epenthetic syllable is not copied but inserted. This means that, in JER-2, NUCLEUS dominates DEP(SF-J, seg). As a consequence of this, DEP(SF-J, seg) undergoes
greater damage in JER-2 than in the other varieties of Jerigonza since this constraint is violated to fill both the onset and the nucleus positions. In order to satisfy ONSET and NUCLEUS, the optimal JER-2 form needs incur two violations of DEP(SF-J, seg) for every epenthetic syllable node it contains (67b).

(67) ONSET, NUCLEUS >> DEP(SF-J, seg)

<table>
<thead>
<tr>
<th>SF:</th>
<th>ONSET</th>
<th>NUCLEUS</th>
<th>DEP(SF-J, seg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\sigma\ \sigma\ \text{arbol})</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. (\sigma\ \sigma\ \sigma\ \sigma\ \text{iari bol})</td>
<td><em>!</em></td>
<td></td>
<td>ii</td>
</tr>
<tr>
<td>b. (\sigma\ \sigma\ \sigma\ \sigma\ \text{tati bol})</td>
<td></td>
<td></td>
<td>titi</td>
</tr>
<tr>
<td>c. (\sigma\ \sigma\ \sigma\ \sigma\ \text{tari bol})</td>
<td><em>!</em></td>
<td></td>
<td>tt</td>
</tr>
</tbody>
</table>

By contrast, in JER-1 and JER-3, the nucleus is filled with a copy of a segment in SF. This indicates that, in these two Jerigonza varieties, the constraint NUCLEUS is satisfied to the detriment of the correspondence constraint INTEGRITY. This strategy allows J to spare a violation of DEP(SF-J, seg) for every epenthetic syllable node it contains. The partial ranking DEP(SF-J, seg) >> NUCLEUS >> INTEGRITY serves to rescue (SF-J)-Identity in JER-1 and JER-3. J is more similar to SF when it includes a copy of an SF-segment than when it adds a new segment. Tableau (68) below illustrates these remarks with the example piso 'floor'. The reader is reminded that only candidates that satisfy top-ranking ANCHOR(\(\sigma\)) and FT-BIN(\(\sigma\sigma\)) remain in competition at this point.
Candidate (68a) violates low-ranking INTEGRITY in order to provide segments that fill the nuclei of the epenthetic syllable nodes. This, however, is not enough to comply with syllabic well-formedness. The constraint ONSET discards this candidate because two of the four syllables it contains are deprived of onsets. Both (68b) and (68c) satisfy ONSET by inserting a consonant for every epenthetic syllable node. Of these two competitors, (68b) is preferred because it avoids incurring too many violations of DEP(SF-J, seg) at the expense of violating lower-ranking INTEGRITY. This move allows candidate (68b) to spare two violations of DEP(SF-J, seg) and maintain a better (SF-J)-Identity.

(68) \( \text{ONSET} \gg \text{DEP(SF-J, seg)} \gg \text{NUCLEUS} \gg \text{INTEGRITY} \)

<table>
<thead>
<tr>
<th>SF: ( \sigma \sigma \sigma ) ( \pi \sigma o )</th>
<th>( \text{ONSET} )</th>
<th>( \text{DEP(SF-J, seg)} )</th>
<th>( \text{NUCLEUS} )</th>
<th>( \text{INTEGRITY} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ( \sigma \sigma \sigma \sigma ) ( \pi \sigma o \sigma o )</td>
<td><em>!</em></td>
<td></td>
<td>i o</td>
<td></td>
</tr>
<tr>
<td>b. ( \sigma \sigma \sigma \sigma ) ( \pi \sigma i \sigma o \sigma o )</td>
<td>k k</td>
<td></td>
<td>i o</td>
<td></td>
</tr>
<tr>
<td>c. ( \sigma \sigma \sigma \sigma ) ( \pi \sigma k \sigma o \sigma o )</td>
<td>k k e ! e</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

But if copying SF-segments helps preserve (SF-J)-Identity, why is it that the onset of epenthetic syllables is not copied as well? In other words, if vowel copying helps rescue (SF-J)-Identity, consonant copying would contribute to maximize that identity. A candidate that contains epenthetic syllables filled with copies of SF-segments (e.g.
[(pi.pi)(si.si)] would comply with top-ranking ANCHOR(σ) and FT-BIN(σσ), plus it would manage to avoid all DEP(sf-J, seg) violations while still respecting NUCLEUS and ONSET. Notwithstanding, consonant copying is not possible in any variety of Jerigonza.

The solution I propose is to split INTEGRITY into two constraints: V-INTEGRITY and C-INTEGRITY. This approach has the advantage of allowing independent evaluations of vocalic and consonantal integrity and it is supported by the fact that processes that cause a vocoid in the input to have multiple correspondents in the output (e.g. diphthongization, vowel-copying) are far more common than processes that cause the same effect in consonants. In JER-1 and JER-3, the well-formedness constraint NUCLEUS dominates V-INTEGRITY. But C-INTEGRITY outranks the well-formedness constraint ONSET. This order of priorities tolerates that a vocalic segment in sf has double correspondents in J, but it does not allow two consonantal segments in J to share a single correspondent in sf.

\[(69) \quad \text{C-INTEGRITY} \gg \text{ONSET} \gg \text{DEP(sf-J, seg)} \gg \text{NUCLEUS} \gg \text{V-INTEGRITY}\]

<table>
<thead>
<tr>
<th>SF:</th>
<th>C-INTEG</th>
<th>ONSET</th>
<th>DEP(sf-J, seg)</th>
<th>NUCLEUS</th>
<th>V-INTEG</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. σ σ σ σ</td>
<td>p!s</td>
<td></td>
<td></td>
<td></td>
<td>i o</td>
</tr>
<tr>
<td>b. σ σ σ σ</td>
<td><em>!</em></td>
<td></td>
<td></td>
<td></td>
<td>i o</td>
</tr>
<tr>
<td>c. p i k i s o k o</td>
<td>k k</td>
<td></td>
<td></td>
<td></td>
<td>i o</td>
</tr>
</tbody>
</table>
In tableau (69), the optimal output form manages to avoid two violations of C-INTEGRITY by epenthesizing, rather than copying, the two consonants that ONSET requires under the epenthetic syllable nodes. The optimal form in JER-1 and JER-3 is one that satisfies ONSET by violating DEP(sf-J, seg) and complies with NUCLEUS by compromising V-INTEGRITY (69c). It should be pointed out that, despite their low rank, DEP(sf-J, seg) and INTEGRITY play a very important role in determining the form of epenthetic syllables. The data show that a maximum of two segments may be added for every epenthetic syllable node. This means that marked structure like complex onsets, diphthongs and codas may not be created in J. There are syllable well-formedness constraints that militate against such configurations.

(70)  \*COMPLEX-O:  \textit{No Complex Onsets}  
Syllable onsets do not branch.

(71)  \*COMPLEX-N:  \textit{No Complex Nuclei}  
Syllable nuclei do not branch.

(72)  \*CODA:  \textit{No Codas}  
Syllables do not have codas.

If epenthetic syllables contained onset clusters, diphthongs or coda consonants, J would certainly get additional marks from these constraints. However, \*COMPLEX-O, \*COMPLEX-N and \*CODA are not directly responsible for the fact that epenthetic syllables are unmarked. These well-formedness constraints are actually dominated by the correspondence constraint MAX(sf-J, seg) since J may contain marked syllable structure, as long as this is structure that is present in SF (73a).
(73) \( \text{MAX(SF-J, seg)} \gg \text{*COMPLEX-O, *COMPLEX-N, *CODA} \)

<table>
<thead>
<tr>
<th>SF:</th>
<th>trejn.ta</th>
<th>( \text{MAX(SF-J, seg)} )</th>
<th>( \text{*COMPL-O} )</th>
<th>( \text{*COMPL-N} )</th>
<th>( \text{*CODA} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>trejn.PV.ta.PV</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b.</td>
<td>tejn.PV.ta.PV</td>
<td>r !</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>c.</td>
<td>ten.PV.ta.PV</td>
<td>r ! j</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>d.</td>
<td>te.PV.ta.PV</td>
<td>r ! jn</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

The question is why it is specifically epenthetic syllables that may not contain marked syllable structure. I claim that \( \text{DEP(SF-J, seg)} \) and \( \text{INTEGRITY} \) are responsible for this. The addition of two segments for every epenthetic syllable node is justified by the need to satisfy \( \text{ONSET} \) and \( \text{NUCLEUS} \). Beyond that point there are no well-formedness constraints requiring the presence of any more segments. On the contrary, there are well-formedness constraints prohibiting them. Crucially, if more than two segments were added for every epenthetic syllable node, then unnecessary violations of either \( \text{DEP(SF-J, seg)} \) or \( \text{INTEGRITY} \) would be incurred. In the evaluation, a candidate that violates the constraints minimally (74a) is favored over candidates that incur unnecessary violations (74b-d), even when the violated constraints are low-ranking.

(74) \( \text{ONSET} \gg \text{DEP(SF-J, seg)} \gg \text{NUCLEUS} \gg \text{V-INTEGRITY} \)

<table>
<thead>
<tr>
<th>SF:</th>
<th>trejn.ta</th>
<th>( \text{ONSET} )</th>
<th>( \text{DEP(SF-J, seg)} )</th>
<th>( \text{NUCLEUS} )</th>
<th>( \text{V-INTEGRITY} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>trejn.Pe.ta.Pa</td>
<td>P P</td>
<td>e a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>trejn.Pe.ta.Pa</td>
<td>Pr ! P</td>
<td>e a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>trejn.Pej.ta.Pa</td>
<td>Pr ! P</td>
<td>ej a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>trejn.Pejn.ta.Pa</td>
<td>Pr ! n P</td>
<td>ej a</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
It should be kept in mind that the epenthetic syllable in Jerigonza is not a reduplicant. Therefore, it is not required to be identical to a base. Recall that epenthetic syllables are needed to meet a prosodic configuration enforced by \textsc{Anchor}($\sigma$) and \textsc{FootBin}($\sigma\sigma$). The reason why these new syllables appear in $J$ is because they are necessary to complete a disyllabic foot that hosts the correspondent of every syllable in $SF$. These new syllables must be well-formed by having a nucleus and an onset but they do not need be identical to any syllable in $SF$.

Concerning diphthongs, it is important to point out that it is the most sonorous vocoid that is copied by the epenthetic syllable (e.g. *trejn.Pi.ta.Pa $\sim$ trejn.Pe.ta.Pa $<$ trejnta 'thirty'). In other words, the peak of the epenthetic syllable is a copy of a segment that is the peak of an $SF$-syllable. This observation suggests that multiple correspondents of a single segment in $SF$ must preserve the syllabic role of the $SF$-segment. The constraint \textsc{St(ructural)}-\textsc{Role}, which requires that correspondent elements play the same syllabic role, may only be satisfied if the two correspondents of a segment parsed as a syllable peak in $SF$ are both parsed as syllable peaks in $J$. According to this, \textsc{St-Role} must dominate \textsc{V-Integrity} to prevent that the less sonorous vocoid of a diphthong be copied by the epenthetic syllable (75b).

\begin{align*}
\text{(75) } & \text{ \textsc{St-Role} } \gg \text{ \textsc{V-Integrity}} \\
\begin{array}{|c|c|c|}
\hline
\text{SF:} & \text{trejn.ta} & \text{St-Role} & \text{V-Integrity} \\
\hline
\text{a. } & \text{trejn.Pe.ta.Pa} & \emptyset & e \\
\hline
\text{b. } & \text{trejn.Pi.ta.Pa} & \{j/i\} & i \\
\hline
\end{array}
\end{align*}
2.4.4 Featural unfaithfulness

Although there is a correspondence relationship binding J to be faithful to SF, these two forms may not be identical because the constraints DEP(SF-J), O-CONTIGUITY and V-INTEGRITY are dominated. This explains why (i) J has more syllables and segments than SF, (ii) J contains intrusive elements, and (iii) J may include vocalic segments with multiple correspondents in SF. Another fissure in (SF-J)-Identity has to do with featural unfaithfulness. A segment x in J may stand in correspondence with a segment y in SF without being featurally-identical. This is because the addition of new syllables in J may create the context for a process that applies to y. The data in (76) below illustrate the processes of nasal assimilation and spiranthization. Nasals assimilate in place to a following consonant (76a) and voiced stops spirantize when preceded by a segment that bears the feature [continuant] (76b).

(76)      SF                      J                      Gloss
a. leŋ.gwa       lem.pe.ŋwa.pa    'tongue'
tjem.po         tjen.te.po.to    'time'
kan.sjon         kaŋ.ka.sjon.ko    'song'
len.to           le.ə[to.ə]o   'slow'
b. kam.bjo       cam.pa.ŋjo.po    'change'
sel.da           sel.te.äa.äa    'cell'
maŋ.go           man.əa.yo.əo    'mango'

In (76a), the nasal re-assimilates to the place of articulation of the new consonant following it, either /p/ , /t/, /k/ or /ŋ/. In (76b), the voiced stop becomes a fricative since it is now preceded by the vowel of the epenthetic syllable. These changes may arise only in JER-1 and JER-2, given that in JER-3 the epenthetic syllable does not alter the context.
where the segments in question appear (e.g. \(a[pa[m].[b]o-pos < a[m].[b]os\) 'both').

Clearly, both processes arise as spreading of a phonological feature: [place], in nasal assimilation and [continuant], in spirantization. I follow Padgett (1995) in the use of Spread as the constraint that forces assimilation. The two relevant version of Spread are defined in (77) and (78) below.

(77) Spread(pl):

\[\text{Spread [place]}\]

The place feature of a consonant spreads to a preceding nasal.

(78) Spread(cont):

\[\text{Spread [continuant]}\]

The feature continuant spreads to a following voiced stop.

As pointed out by Padgett (1995), it may be that Spread must ultimately be reduced to more fundamental constraints invoking plausible phonetic bases for assimilation such as the fact that it enhances the perceptibility of the affected feature by extending it, it eliminates contrasts in non-prominent locations and it leads to fewer overall articulations/specifications. For the current purposes, however, Spread suffices to embody the spreading imperative necessary to account for assimilation.

There is also a constraint family that regulates featural correspondence between SF and J. This is Ident(F), originally proposed by McCarthy and Prince (1995), which is defined as follows.

(79) Ident(F):

\[\text{Feature Identity}\]

Let \(\alpha\) be a segment in \(S_1\) and \(\beta\) be any correspondent of \(\alpha\) in \(S_2\).

If \(\alpha [\gamma F]\), then \(\beta\) is \([\gamma F]\)
The specific instantiations of $\text{IDENT}(F)$ acting on the data in (76) are $\text{IDENT}(\text{SF-J, pl})$ and $\text{IDENT}(\text{SF-J, cont})$. In Jerigonza, $\text{IDENT}(\text{SF-J, pl})$ and $\text{IDENT}(\text{SF-J, cont})$ are outranked by $\text{SPREAD(pl)}$ and $\text{SPREAD(cont)}$. In tableau (80) below, the optimal candidate (80a), undergoes the spreading processes at the expense of violating $\text{IDENT}(\text{SF-J})$.

(80) \hspace{1cm} \text{SPREAD(pl), SPREAD(cont) >> IDENT(SF-J, pl), IDENT(SF-J, cont)}

<table>
<thead>
<tr>
<th>SF: a[m].b]os</th>
<th>SPR(pl)</th>
<th>SPR(cont)</th>
<th>ID(SF-J, pl)</th>
<th>ID(SF-J, cont)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. $\not\varepsilon$ a[ŋ].ka.[β]os.ko</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>b. a[ŋ].ka.[b]os.ko</td>
<td></td>
<td>*</td>
<td>!</td>
<td></td>
</tr>
<tr>
<td>c. a[m].ka.[b]os.ko</td>
<td></td>
<td>!</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

2.5 Summary

Jerigonza is a ludling in Spanish. Ludlings are alternate linguistic systems that are parasitic on a natural language. They manipulate the morpho-phonological structure of their host language. Jerigonza alters Spanish word-structure in order to achieve a prosodic configuration where every syllable is parsed under a disyllabic foot. This is an effect triggered by undominated prosodic constraints such as $\text{PARSE-SYLL}$ and $\text{FOOT-BIN(σσ)}$. Additionally, the constraint $\text{ANCHOR(σ)}$ forces the edgemost elements of a syllable in the source form to correspond to the edgemost elements of a foot in Jerigonza. The only way to satisfy these conditions is if Jerigonza adds an epenthetic syllable for every syllable in the source form, so that the correspondent of every syllable in the source form pairs up with an epenthetic syllable to complete a disyllabic foot that makes
anchoring possible. There are three different varieties of Jerigonza according to ANCHOR(σ). In JER-1, ANCHOR(σ)L prevents epenthetic syllables from appearing at the left periphery of the foot. In JER-2, ANCHOR(σ)R causes the same effect for the right periphery of the foot, and in JER-3, ANCHOR(σ)L and ANCHOR(σ)R bar epenthetic syllables from both foot edges. Epenthetic syllables in Jerigonza may not bear stress because the projection of foot heads is input-dependent. The constraint HEAD(Ft)DEP demands that every segment parsed under a tonic syllable in Jerigonza have a correspondent in the source form.

Epenthetic syllables must comply with principles of syllabic well-formedness embodied by constraints such as NUCLEUS and ONSET. ONSET is always satisfied by adding an epenthetic consonant, which is a voiceless stop because it is less costly to parse a low-sonority segment as a syllable margin. NUCLEUS, on the other hand, may be satisfied through vowel-copying, when it dominates V-INTTEGRITY, or through vowel epenthesis, when it outranks DEP(sf-j, seg). Even though DEP(sf-j) and INTEGRITY are dominated, they are violated only minimally. Adding more than two segments for every epenthetic syllable node would give rise to unjustified violations of DEP(sf-j, σ) or INTEGRITY that would damage (sf-j)-Identity unnecessarily. Vowel-copying is precisely a strategy to reduce the dissimilarity between SF and J that the dominant prosodic constraints are causing. One of the most striking differences between Jerigonza and its source form is the disruption in the contiguity of elements in the source form. Domination of the prosodic constraints ANCHOR(σ) and FOOT-BIN(σσ) over the correspondence constraints DEP(sf-j) and O-CONTIGUITY is what causes Jerigonza to
have a greater number of syllables than the source form and that the sequential order of elements in the source form be partially broken in Jerigonza. The following constraint hierarchy accounts for all the properties of this language game.

(81)  Constraint hierarchy responsible for Jerigonza:

```
<table>
<thead>
<tr>
<th>PARSE-SYLL</th>
<th>FOOT-FORM (Tr)</th>
<th>ALIGN-HEAD</th>
<th>ANCHOR(σ)</th>
<th>FT-BIN(σσ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-INTEGRITY</td>
<td>ONSET</td>
<td>*M/p,t,k,≠</td>
<td>DEP(sf-J, σ)</td>
<td>O-CONTIG</td>
</tr>
<tr>
<td></td>
<td>DEP(sf-J, seg)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUCLEUS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V-INTEGRITY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```
3.0 Introduction

Compounding is a morphological process that combines two free morphemes to create a new word. In regular compounds, the two formatives appear in strict linear order such that the second morpheme begins where the first one ends.

(1) \[
\begin{array}{c}
\text{Source Forms} \\
\text{Midnight} \quad \text{Night} \\
\text{Source Forms} \\
\text{Mediánocche} \\
\text{Midnight} \\
\end{array}
\]

Blends are a type of compound where morphemes break that strict linear order by overlapping. A two-to-one correspondence relationship may be established between two segments in the source forms and a single segment in the blend. In (2) below, the segments \(s, c, i\) in the source form \(suci\) and \(s, c, i\) in the source form \(sociedad\) share a single correspondent in the blend \(suciad\).

(2) \[
\begin{array}{c}
\text{Source Forms} \\
\text{Dirty society} \\
\text{Source Forms} \\
\text{Suciedad} \\
\text{Dirty society} \\
\end{array}
\]
This type of correspondence relationship results in morpheme overlapping given that the segments in the source forms sharing a single correspondent in the blend belong to different morphemes.

Known as blends, amalgams, portmanteaux (or cruces, in the Spanish literature), this word-formation process has been attested in languages such as English (as early this century as Bergstrom 1906, Wood 1911 and more recently in Hockett 1967, Soudec 1970, Adams 1973, Devereux 1984, Cannon 1986, Janda 1986), Spanish (García de Diego 1922, Urrutia 1978, Meier 1983, Pharies 1987), Japanese (Kubozono 1989, 1990), Arabic (Bat-El 1996), French, German and Russian (Berman 1961). Despite their being crosslinguistically attested, it was not until recently that blends began to be seen as the result of a true word-formation process and not just as an oddity arising from some slip of the mind. From this viewpoint, blends are a challenging type of morphological process whose functioning has not yet been totally understood.

I propose to account for morphological blending through the interaction of the constraints NO-PWd* and ALIGN(M ▷◁ P). NO-PWd* bans prosodic word recursion whereas ALIGN(M ▷◁ P) demands that each edge of a morphological word match the corresponding edge of a prosodic word. Under the ranking NO-PWd* >> ALIGN(M ▷◁ P), the two morphological words that are being combined must do so under a single prosodic word. By beginning or ending at the same point, the two formatives manage to align the greatest number of word edges possible, so that ALIGN(M ▷◁ P) is violated minimally. Morphological blending is presented here as another piece of evidence in support of the claim that Spanish word formation is not exclusively concatenative.
The organization of this chapter is as follows: Section 3.1 describes the properties of blending. Section 3.2 reviews previous analyses that are representative of the standard approaches to blends. Section 3.3 presents a new analysis that explains essential traits of word-blending such as (i) the amalgamation of the two source forms under a single phonological form, (ii) the ambimorphemic character of certain segments, and (iii) the locus of blending. Such results are consequential upon acknowledging the fact that phonological constraints may condition certain morphological processes. Section 3.4 closes the chapter with a summary of the findings.

### 3.1 The properties of blending

The main feature of blending is that the source forms do not simply combine, they amalgamate. The following examples are representative of Spanish blends.¹

<table>
<thead>
<tr>
<th>Source Forms</th>
<th>Blend</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. dedo + democracia</td>
<td>dedocracia</td>
</tr>
<tr>
<td>'finger' 'democracy'</td>
<td>'arbitrary system of election by pointing with the finger'</td>
</tr>
<tr>
<td>b. sucio + socialista</td>
<td>sucialista</td>
</tr>
<tr>
<td>'dirty' 'socialist'</td>
<td>'dirty socialist'</td>
</tr>
<tr>
<td>c. caca + cocaína</td>
<td>cacaina</td>
</tr>
<tr>
<td>'excrement' 'cocaine'</td>
<td>'filthy cocaine'</td>
</tr>
<tr>
<td>d. analfabeta + bestia</td>
<td>analfabestia</td>
</tr>
<tr>
<td>'illiterate' 'beast, idiot'</td>
<td>'dumb illiterate person'</td>
</tr>
</tbody>
</table>

¹ Some of the examples used in this chapter come from Lang (1990). A greater number of them come from Pharies (1987), who presents an abundant sample of blends from the Castilian dialect. The examples I provide are forms I heard in use during my college years in Colombia. All data are presented in Spanish orthography except when clarity demands a phonemic transcription. Glosses are mine.
These data also show that the source forms of a blend usually have one or more segments in common. This is clearly a factor that contributes to form the amalgam. In (3a), the source form \textit{dedo} has the elements \textit{d, e, o} in common with the source form \textit{democracia}. In (3b), the source form \textit{sucio} has the elements \textit{s, c, i} in common with the source form \textit{socialista} and, similarly, all other examples in (3) display some degree of segmental affinity. It should be formally and not just intuitively explained why this type of affinity between source forms facilitates blending.

Blends would not be totally explained if precise criteria to determine the locus of blending were not provided. For example, why the source forms \textit{dedo} and \textit{democracia} amalgamate in such a way as to yield the blend \textit{dedocracia} and not any of many other logical combinations (e.g. \textit{dedomocracia, democradedo, demodedo}, etc)? If blending were just about clipping the input words and putting their remains together, then \textit{*dedomocracia, *democradedo, *demodedo} should be as wellformed as \textit{dedocracia}. The fact that they are not requires the postulation of some principle(s) that rule(s) out such illformed combinations.

Uncovering the principles responsible for these properties of blends is not an easy task. Bauer (1983) points out that there is a high degree of unpredictability inherent to blending. The more syllables the source forms have, the more possibilities arise for their combination in a blend. He proposes that some combinatorial possibilities could be ruled
out through blocking, in the case that the resulting form happens to coincide with an already existing lexical item. Nevertheless, his claim is that narrowing all possible combinations down to only one is something practically impossible to do without making an arbitrary choice among equally good competing forms. Such a strong claim does not seem an exaggeration when one considers a more puzzling set of data like the following.

(4) a.  muñeco  dedo  'puppet'  'finger'  
     dedoñeco  *dedeco  'finger-puppet'  Blend

b.  soponcio  kilo  'faint'  'kilogram'  
    kiloponcio  *kiloncio  'a great deal of'  Blend

There appears to be no explanation as to why the blended forms in (5) should be dedoñeko and kiloponcio and not the alternative forms *dedeco and *kiloncio. The first set of forms does not appear to respect any consistent principle(s) determining how much segmental material from each source form should be preserved. Actually, if one assumes that what the speaker intends to do in blending is to have one of the source forms replace a part of the other one, then the latter set of output forms should be better than the former. This type of data led Bauer (1988) to conclude that blends are often created ‘with no apparent principles guiding the way in which the two original words are mutilated’ (p. 59). Also, based on the fact that most blends can not be analyzed into clear-cut morphs, Bauer expresses doubt that they could even ‘form a real part of morphology’. The
position I assume here is that there are different types of blended forms. Bauer is probably right in affirming that forms like those illustrated in (4) are synthetic creations that obey no guiding principles. Nonetheless, the data in (3) represent a type of blended forms governed by consistent principles. Note that in (3), the source forms are not arbitrarily clipped. On the contrary, there is a strong tendency to maximize the elements in the source forms through overlapping. Furthermore, the locus of blending is always oriented towards one of the peripheries of the word, as illustrated in (5).

(5)  

a. **Left-edge blending:**

\[
\begin{array}{c}
\text{d e m o c r a c i a} \\
\text{d e d o} \\
\text{d e d o c r a c i a}
\end{array}
\]

*Source form 1*

*Source form 2*

*Blend*

b. **Right-edge blending:**

\[
\begin{array}{c}
\text{i n o c e n t e} \\
\text{g e n t e} \\
\text{i n o g e n t e}
\end{array}
\]

*Source form 1*

*Source form 2*

*Blend*

This is the type of blend that is relevant for this dissertation and which I present as an alternative to concatenative morphology. In the following section, I review the proposals of two scholars who have undertaken the task of explaining this kind of words.
3.2 Previous approaches to morphological blending

Most of the works devoted to blends have been limited to presenting the data and making general observations concerning their behavior (Urrutia 1978, Bauer 1983, 1988, Devereux 1984, Lang 1990 and several others like these). There are not many formal analyses proposed in the literature in order to account for blends. Although they are not the only formal analyses on blending, in this section, I will focus on the proposals made in Pharies (1987) and Janda (1986) because they are representative of the standard approaches to blends. Pharies (1987) reflects the traditional treatment of blends within a linear model. Janda (1986) is representative of the view of this phenomenon within an autosegmental framework. The main difference between the linear and the autosegmental approaches is that the former precludes the possibility of morpheme overlapping, whereas the latter allows that a single segment be associated with more than one morpheme.

3.2.1 Blending as shortening and concatenation

Pharies (1987) is the first formal account of Spanish blends. It is a significant contribution to give blends a place in the morphological component of the language. Pharies argues for the character of morphological blending as a true word-formation process that should be distinguished from cases of associative interference or contamination, where two different items might get mixed due to some slip of the mind. Blends are the result of a conscious process as evinced by the fact that the meanings of the two source forms have been intentionally combined to create a new concept. Blends
are driven by a conscious force that responds to the speaker’s intention to make a clever semantic association between two lexical items.

Pharies proposes that blends result from the application of two operations: (i) shortening of at least one of the source forms, either through simple clipping or through haplologic shortening and (ii) concatenation of the shortened source forms. He does not provide any illustrations of the application of these operations but according to the lines of his account the derivation of a blend such as *jetabulario* would be as in (6).

(6) 

<table>
<thead>
<tr>
<th>Source Forms</th>
<th>Blend</th>
</tr>
</thead>
<tbody>
<tr>
<td>jeta + vocabulario</td>
<td>jetabulario</td>
</tr>
<tr>
<td>‘mouth of an animal’</td>
<td>‘bad speech characterized by the use of cuss words’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>shortening</th>
<th>concatenation</th>
</tr>
</thead>
<tbody>
<tr>
<td>jeta + vocabulario</td>
<td>jeta bulario</td>
</tr>
<tr>
<td>(a)</td>
<td>(a)</td>
</tr>
<tr>
<td>(b)</td>
<td>(b)</td>
</tr>
</tbody>
</table>

As it becomes clear from (6), one of the problems of this analysis is that the shortening operation can apply in more than just one way. In (6a), the first source form has not been affected by the shortening and only the source form *vocabulario* has been clipped to yield *bulario*. In (6b), both source forms have been clipped resulting in the shortened forms *jet* and *abulario*. It is true that the correct result is obtained in both cases and so, the approach appears to work. Both (6a) and (6b) yield the desired *jetabulario* and since the results are equally as good, a decision between one or the other is not necessary. However, unless the shortening process is constrained in some way, nothing makes the derivations in (6) any better from those in (7), which are totally deviant.
(7) shortening concatenation

(a) jeta + bocabulario =======> je cabulario =========> *jecabulario
(b) jeta + bocabulario =======> jocabulario =========> *jocabulario

Under the shortening analysis, there is more than one way in which the source forms could be clipped (6a,b). But crucially, this approach lacks a mechanism able to rule out illformed candidates like (7a,b). A substantial problem of the cut and paste approach is that it overgenerates because of its lack of a precise criterion to determine how the shortening operation should take place and how much should be shortened. More importantly, the shortening process is not supported by any morpho-phonological principle(s). There is no explanation as to why the source forms should be clipped. Why is it that some segments must be sacrificed in the generation of a blend? Under this view, it only happens because it is necessary to derive the attested form but there is no principled motivation. Clearly, the explanatory power of this account is minor because it is concerned only with the procedures necessary to produce a blend and it overlooks the morpho-phonological principles at play.

The operation that concatenates the clipped source forms is also unprecise. Pharies offers no criterion to determine how it should be implemented. Because of this, not only are the concatenations illustrated in (6a) and (6b) possible, those presented in (8a) and (8b) should be equally as good since nothing in the analysis would rule them out.

(8) shortening concatenation

(a) jeta + bocabulario =========> jeta bulario =========> *bulariojeta
(b) jeta + bocabulario =========> jet abulario =========> *abulariojet
The closest device in Pharies (1987) applicable to this issue is sequential ordering of the source forms, which says that the second source form begins where the first one leaves off. This condition is able to rule out forms in which the segmental strings of the two source forms appear interspersed as in *jebutalario. However, for both examples in (8), the second source form begins where the first one leaves off and the amalgams are still ill-formed. In sum, the cut-and-paste analysis does not provide an explanation for the locus of blending either.

Finally, even though Pharies considers overlapping of phonemes, overlapping of distinctive features and even overlapping of CV-structure as one of the factors at large in morphological blending, all of these kinds of overlapping are incompatible with the shortening approach. Note that once the segmental contents of one of the source forms have been clipped, there is nothing left for the other source form to overlap upon.

(9)

<table>
<thead>
<tr>
<th>Source Forms</th>
<th>Blend</th>
</tr>
</thead>
<tbody>
<tr>
<td>analfabeta + bestia</td>
<td>analfabestia</td>
</tr>
<tr>
<td>‘illiterate’</td>
<td>‘dumb illiterate’</td>
</tr>
</tbody>
</table>

shortening  concatenation
analfabeta + bestia ========> analfa   bestia ==========> analfabestia

The overlapping of morphemes involving the source forms analfabeta and bestia is realized on the segments /b, e, t, a/. However, when the string beta is clipped off the source form analfabeta, the segments /b, e, t, a/ of the source form bestia have nothing upon which to overlap. Put in a nutshell, shortening precludes overlapping. This result is especially undesirable given that a distinguishing property of blends is that two words dwell within a single phonological form. It is precisely this peculiarity that makes blends
different from regular compounds and that gives them their character of amalgams. All these flaws of a cut-and-paste analysis point towards the unsuitability of a linear approach to account for morphological processes such as blending, where the generation of new lexical items is not accomplished through morpheme concatenation.

3.2.2 Blending as an instance of morpheme overlapping

Within the autosegmental model, Stemberger (1980) first advanced the proposal that a segment may be associated with more than one morpheme. The idea was originally put forward to account for morpheme fusions (e.g. English *betcha*/beca/ < bet + you) and morphological haplology (e.g. English -s’ as in *boys’ realizing both the plural and the possessive morphemes). Janda (1986) elaborates on Stemberger's proposal and applies it to other phenomena. He establishes a parallelism between Autosegmental Phonology and Morphology, which shows that in the same way that a prosodic constituent such as the syllable may be associated with more than one tone: Mende mbû ‘owl’.

(10) Phonological many-to-one association:

```
               H   L
             /   \
           σ     
              
             C   V
             /   \ 
           mb   ü
```

Or a tone may be associated with more than one syllable: Mende pêle ‘house’.
A morpheme may be associated with more than one segment: Spanish *pan* ‘bread’.

Or one segment may be associated with more than one morpheme: English *-s’*, ‘plurality’ and ‘possession’.

Whereas the association of a morphological constituent with more than one segment is quite common (12), the association of one segment with more than one morpheme is rather rare. In support of the claim that the type of association illustrated in (13) is indeed possible, Janda presents phenomena such as phonesthemes (*sn*- ‘related to...
the nose’ as in *sneeze, snore, sniff*, etc.), blends (*motel* < *motor* + *hotel*) and puns (*can* ‘to put in a can’ and ‘to be able to’), where two morphemes converge on the same segmental string. Relevant to the current work is Janda’s formal account of blends. Using the Autosegmental Framework, he relies on association lines to account for the preservation/loss of segmental material from the source forms.

(14) Formation of the English blend *smog*:

\[
\begin{array}{c}
\varphi_3 \\
\varphi_1 \\
 s \quad m \quad o \quad k \\
 C \quad C \quad V \quad C \\
 f \quad \varnothing \quad g \\
 \varphi_2 \\
\end{array}
\]

The melodemes /s, m, o, k/ from melodic tier 1 are associated with morpheme \(\varphi_1\) through association lines. Similarly, the melodemes /f, \(\varnothing\), g/ from melodic tier 2 are associated with morpheme \(\varphi_2\). The morphological operation that combines morphemes \(\varphi_1\) and \(\varphi_2\) is formalized by the creation of the new morpheme \(\varphi_3\), to which \(\varphi_1\) and \(\varphi_2\) are associated. The two melodic strings associated with \(\varphi_1\) and \(\varphi_2\) are mapped onto the prosodic template. But notice that some melodemes are left unassociated. These are stray segments that are removed from the representation by Stray Erasure before reaching surface level. In (14), the melodemes /o, k/ from melodic tier 1 and the melodeme /f/
from melodic tier 2 are not linked to the skeleton. These segments may not surface because they are not structurally licensed. Under this approach, the presence or absence of an association line is what determines the preservation or deletion of segmental units.

This analysis tries to capture the fact that two words dwell within a single form by assuming that they share a single prosodic template. This is particularly relevant for the representation of ambimorphemic segments, which arise when the source forms have certain segments in common. Consider the English blend *motel* created from the source forms: /motə/ and /hotɛl/. The fact that the segments /o, t/ are contributed by both source forms can be captured as a property of the blend if these melodemes are allowed to link to the prosodic template from both melodic strings.

(15) Formation of the English blend *motel*:

This double-linkage signals morpheme overlapping. The second and third slots of the template are ambimorphemic by virtue of their double association. Note that since the source forms are not clipped, this representation-based account is perfectly compatible with the notion of morpheme overlapping. Clipping is only apparent. In actuality, if some segments do not surface in the output it is due to the fact that two non-
identical melodemes may not link to the same prosodic slot. In such case, one of the two segments has to be sacrificed.

Janda’s autosegmental approach to blends offers the following answers to the issues related to morphological blending. A blend is an amalgam because the two source forms combine under a single prosodic template. Second, the segments lost in morphological blending are those that can not be associated with a slot of the prosodic template. Third, since two featurally-identical melodemes belonging to different morphemes are allowed to link to the same prosodic slot, two morphemes may overlap upon the same segments. A many-to-one relationship between morphemes and segments is possible in both directions: a single morpheme may be associated with more than one segment or a single segment may be associated with more than one morpheme. Finally, even though it is not formalized, Janda claims that the locus of blending and the sequential, uninterrupted ordering of the source forms with respect to one another responds to the need of ensuring the recoverability of the input. The intuition is that the source forms of a blend would be too hard to recover if the blend looked too different from them.

Despite all the insights of this approach, some issues still remain unresolved. Like most authors, both Pharies and Janda agree that morphological blending is a type of compounding, but no explanation has been offered yet as to why the two formatives should squeeze into a single form (a single prosodic template in Janda’ analysis). Why are blends not just like regular compounds? Janda does mention a factor of economy in motivating overlapping morphemes. He claims that overlapping morphemes help reduce articulatory effort, but the argument is not formally developed. Another shortcoming of
this proposal is that the linking of certain segments to the prosodic template is ad hoc. The representations in (14) and (15) above make it visually rather clear which segments are preserved in the blend and which ones are not. What remains unclear is why the preservation of one of two competing segments is better than the preservation of the other one. In (15), there are two segments competing for the first C-slot of the prosodic template: /m/ and /h/. That it should be /m/ and not /h/ that gets associated with the first C-slot of the prosodic template has to be stipulated since there is no criterion proposed to give /m/ priority over /h/. Additionally, even though this approach formally recognizes that overlapping is a factor that bears on the felicity of blends, nothing reflects how the affinity between the source forms facilitates blending. It is good if the source forms have one segment in common, but the more segments they have in common the better the blend. Despite its relevance, no attempt has been made yet to formally explain this gradient character of the felicity of blends. In the following section, I propose a constraint-based analysis that answers these unresolved issues in terms of the interaction between prosodic and faithfulness constraints.

3.3 Morphological blending as prosodically-governed compounding

It has been argued that blends are a subcategory of compounding (Adams 1973, Algeo 1977, Hansen 1983, Pharies 1987, Janda 1986, among others) because the morphemes that participate in morphological blending, just like those that participate in compounding, are free or potentially-free morphemes. Since a free morpheme is equivalent to a morphological word (MWd), it follows that both compounding and
blending combine MWd's to generate a new lexeme. This new lexeme constitutes a complex MWd, which will be represented as MWd*.

(16) **Morphological Compounding and Blending:**

```
MWd*  
MWd    MWd
```

In addition to their morphological structure, blends also share with compounds the property of having a unity of meaning that an NP lacks. Consider for example, the semantic contrast between the blend *charloteca* 'a library where people chat rather than study', denoting a type of library; and the NP *biblioteca para charlar* 'a library for chatting', which is a bare description.

(17) **Two free morphemes combine to yield a third one:**

```
'chat'  MWd  'library'
```

Assuming that a morpheme is a unit of meaning, one can clearly identify three morphemes in a blend. *charloteca* does not only convey the meaning 'a library where people chat rather than study', it also reveals the meanings 'chat' and 'library'. In other words, the meanings of the two input MWd's combine in a blend to form a new unified concept. Although the boundaries between the MWd's are blurred due to overlapping,
blends do have a compositional morphological structure. I specifically claim that the two input MWd's remain in the blend according to the analysis $\text{MWd}^* \rightarrow \text{MWd} \ \text{MWd}$, which applies to both blends and compounds. Only so is it possible to maintain that blends contain ambimorphemic segments since no segment in a blend could be ambimorphemic if there were only one morpheme.

3.3.1 Compounding without recursion of prosodic words

Despite their semantic and morphological similarities, there is a crucial difference between compounds and blends as far as their prosodic structures are concerned. Blends differ from compounds in the fact that one of the source forms is contained within the prosodic structure of the other one. To appreciate this feature of blends, note from the examples in (18) below that a blend replicates the prosodic structure of one of its source forms. The prosodic word (PWd) that subsumes the blend is equivalent to the PWd that subsumes its longer source form. This is evinced by the fact that they have the same number of syllables and the same foot structure. Through blending, the shorter source form is fit into the prosodic structure of the longer one. Nonetheless, the blend has a single primary stress, which indicates that the two source forms dwell in it under a single PWd.

(18) **Blending: two source forms dwell within a single PWd:**

a. $[(\text{su.cio})]_{\text{PWd}} \quad [\text{so.cie.(dád)}]_{\text{PWd}} \quad \text{Source forms}$

$[\text{su.cie.(dád)}]_{\text{PWd}} \quad \text{Blend}$
b. \(((\text{de.do})_{\text{PWd}} \text{ de.mo.}(\text{crácia})_{\text{PWd}})\) \quad \text{Source forms} \\
\text{[de.do.(crá.cia)]}_{\text{PWd}} \quad \text{Blend} \\
\text{(gén.te)}_{\text{PWd}} \quad \text{[i.no.(cén.te)]}_{\text{PWd}} \quad \text{Source forms} \\
\text{[i.no.(gén.te)]}_{\text{PWd}} \quad \text{Blend}

In compounding, on the other hand, each formative projects its own PWd. As a consequence of this, there is no need for one of the source forms to 'jump' into the PWd of the other one.

(19) **Compounding: each formative is associated with its own PWd:**

a. \[\text{[kon.tes.ta.}(\text{dór})]_{\text{PWd}} \text{[au.to.(má.ti).co]}_{\text{PWd}}\] ‘answering machine’
\[\text{[(cuén.ta)]}_{\text{PWd}} \text{[ban.(cá.ria)]}_{\text{PWd}}\] ‘bank account’

b. \[\text{[[càm.po]}_{\text{PWd}} \text{[(sán.to)]}_{\text{PWd}}]\] ‘cemetery’
\[\text{[[(pún.ta)]}_{\text{PWd}} \text{[(pié)]}_{\text{PWd}}]\] ‘kick’

Spanish compounds of the type illustrated in (19a) are known as *syntagmatic compounds* because they originate from a syntactic phrase. They are analyzable as an NP whose head N takes a complement AP. Here, I follow Lang (1990) in his analysis of this type of formation as a case of compounding based on the fact that they represent a cohesive semantic unit referring to a new concept or object. Prosodically, they do not behave like a unit since they contain two primary stresses. This constitutes sound evidence that they are associated with two independent PWd's. In morphological terms, they are not true compounds either because the two formatives constitute two independent MWd's. This claim is confirmed by the fact that the plural morpheme, which is the outermost suffix on a MWd, attaches to both formatives when such forms
are pluralized (e.g. *kontestadóres automáticos). If these forms actually became a single MWd, then they would contain a single instance of the plural morpheme (e.g. *contestadór automáticos). Based on this observation, I claim that the forms in (19a) do not undergo morphological compounding. They are NP's that have acquired cohesion of meaning but their morphological structure does not include a MWd*.

(20)    MWd   MWd       MWd   MWd
       |       |           |       |
       [kontestadór] [automático] [kontestadóres] [automátikos]

Since such forms are instances of compounding only in the sense that they exhibit cohesion of meaning, I will refer to them as SEMANTIC COMPOUNDS. Semantic compounds contrast with the type of compounds illustrated in (19b), which are known as ‘perfect compounds’ because they do behave like a true unit prosodically (e.g. they are subsumed by a single PWd* with a single primary stress) morphologically (e.g. they form a single MWd* to which the plural morpheme attaches: puntapiés ~ *puntas pies 'kick’) and semantically (e.g. they exhibit cohesion of meaning). For clarity, I will refer to ‘perfect compounds’ as MORPHOLOGICAL COMPOUNDS, which are characterized by the projection of a new MWd*.

(21)      MWd*
          |      |
          MWd MWd
          |      |
       [ [cámpro] [sánto] ]
In sum, there are two types of compounds in Spanish (20 and 21). Their different morphological composition is actually mirrored in the phonology - specifically, in their prosodic structures. (i) semantic compounds respond to the prosodic form: [...] _\text{PWd} [...] _\text{PWd}. It is true that they denote a unified concept, but they are neither a morphological nor a prosodic unit because their formatives form independent morphological and prosodic words. (ii) morphological compounds, on the other hand, respond to the prosodic configuration: [...] _\text{PWd} [...] _\text{PWd} _\text{PWd}*. They are a morphological unit because they behave like a single morphological word: _\text{MWd}* (e.g. camposantos ~ *campos santos 'cemeteries'). They are also a prosodic unit because, even though each formative projects its own PWd, both formatives are encompassed by a PWd* constituent. Blends, which obey the prosodic form: [...] _\text{PWd}, are similar to morphological compounds in that they also behave like a semantic, morphological and prosodic unit. But blends differ from morphological compounds in the fact that one of the source forms is contained within the prosodic structure of the other one\(^3\).

Interestingly, the input for compounds and blends is the same: two morphological words, _\text{MWd} + _\text{MWd}.

\begin{align*}
\text{(22) Input Form of Compounds:} & \quad & \text{Input Form of a blend:} \\
\text{MWd} & + & \text{MWd} & & \text{MWd} & + & \text{MWd} \\
\text{(i) contestador} & \quad & \text{automático} & & \text{sucio} & \quad & \text{sociedad} \\
\text{(ii) campo} & \quad & \text{santo} & & & & \\
\end{align*}

\(^3\) Notice that blends are actually a type of morphological compound because a new lexeme _\text{MWd}* is created as a result of morphological blending. What makes blends different is their prosodic configuration.
But their corresponding output forms differ in prosodic structure:

(23) Output Form of Compounds: Output Form of a blend:
    (i) [con.tes.ta.(dór)]_{PWd} [au.to.(má.ti).ko]_{PWd} [su.cie.(dád)]_{PWd}
    (ii) [[(càm.po)]_{PWd} [(sán.to)]_{PWd} ]_{PWd*}

It seems rather clear then that, although compounds and blends are subject to the same morphological operation: $MWd + MWd \rightarrow MWd^*$, they obey different prosodic principles. Particularly, the source forms of a blend appear to be required to save prosodic structure by avoiding recursion of the constituent $PWd$. In terms of Optimality Theory, some constraint $C$ must be demanding satisfaction of this prosodic configuration. I propose that blends are subject to the constraint No-PWd*.

(24) No-PWd*: *No Prosodic Word Recursion*
    Prosodic words do not compound.

It has been noticed that recursion of prosodic constituents is not possible, except for the category $PWd$. McCarthy and Prince (1993b : 5) claim that ‘recursion of the categories foot and syllable is impossible, not because of some special stipulation, but because the independently justified foot and syllable theories of Universal Grammar bar it. Through their various principles, foot and syllable theories license a very limited set of expansions of foot and syllable, and recursion is simply not among these options.’ McCarthy and Prince point out that phonological theory only permits recursion of prosodic words because there is no upper bound on the length of that prosodic constituent. Nonetheless, even if prosodic word recursion is tolerated by phonological
theory, it is not freely granted. Through No-PWd*, I intend to formalize the fact that recursion of PWd does come at a cost. My claim is that the resulting constituent, PWd*, is marked with respect to PWd since a new layer of prosodic structure is added. Additionally, the stress of the leftmost PWd has to be downgraded, so that the rightmost PWd becomes prominent as the head of PWd*. The constraint No-PWd* favors prosodic unmarkedness by penalizing this additional complexity in prosodic structure.

Despite its cost, PWd recursion is necessary in the combination of two MWd's provided that every morphological constituent is subject to prosodic licensing. Specifically, every MWd must be licensed by a PWd. Prince and Smolensky (1993) formalize this condition as the constraint \( \text{LX} \approx \text{PR} \).

(25) \( \text{LX} \approx \text{PR} \): \emph{A Lexical Word equals a Prosodic Word}

A member of the morphological category MWd corresponds to a PWd.

The effect of \( \text{LX} \approx \text{PR} \) is to ensure that for every MWd there is a PWd that licenses it. According to this, violations of \( \text{LX} \approx \text{PR} \) are to be expected when the output contains fewer PWd's than MWd's. In compounding, the two MWd’s that stand for the two formatives are licensed by a PWd each (see 26a,b). Additionally, in true morphological compounding, the new MWd* is licensed by a new PWd* (26b). These patterns are illustrated by the representations in (26) below.
(26)  a. Semantic Compounds:

\[ \text{PWd} \quad \text{PWd} \]

\[ \text{[contestador]} \quad \text{[automático]} \]

\[ \text{MWd} \quad \text{MWd} \]

b. Morphological Compounds:

\[ \text{PWd} \quad \text{PWd} \]

\[ \text{MWd} \quad \text{MWd} \]

This consistent behavior of compounds suggests that \( \text{Lx} = \text{Pr} \) outranks the constraint NO-PWd*. Dominance of \( \text{Lx} = \text{Pr} \) ensures that there will be a PWd for every MWd no matter if additional prosodic structure needs be projected. Tableau (27) illustrates the selection of an optimal semantic compound with the example \( \text{cuénta bancária} \) 'bank account'. (Square brackets [ ] indicate the left and right edges of PWd and \{ \} indicate the respective edges of MWd). \( \text{Lx} = \text{Pr} \) favors (27a) over the rest of candidates because it is the only one that provides two PWd's, one for each MWd. Candidates (27b) through (27d) leave one of the two MWd's unlicensed.

(27)  \( \text{Lx} = \text{Pr} \ >> \text{NO-PWd}^* \)

<table>
<thead>
<tr>
<th>Input: 4 kOnta bankaria</th>
<th>( \text{Lx} = \text{Pr} )</th>
<th>NO-PWd*</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[( \text{kwénta})]<em>{\text{PWd}} [( \text{bankária})]</em>{\text{PWd}}</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>[( \text{kwénta})]_{\text{PWd}} [( \text{bankária})]</td>
<td>*!</td>
</tr>
<tr>
<td>c.</td>
<td>[( \text{kuenta})]<em>{\text{PWd}} [( \text{bankária})]</em>{\text{PWd}}</td>
<td>*!</td>
</tr>
<tr>
<td>d.</td>
<td>[( \text{kuenta})]<em>{\text{PWd}} [( \text{bankária})]</em>{\text{PWd}}</td>
<td>*!</td>
</tr>
</tbody>
</table>

\[4\] The segment /O/ in the input form stands for a diphthongizing mid-back vowel.
The optimal form, (27a), need not incur recursion of the constituent PWd because semantic compounds like *cuénta bancária* do not yield a MWd*. Since there is no MWd*, there is no need of a PWd* to license it. The upshot is that semantic compounds do not have to violate No-PWd* in order to satisfy the constraint $L \approx Pr$. A different situation arises in the formation of morphological compounds. The reader is reminded that, in the generation of a morphological compound, a new MWd*, which is also subject to prosodic licensing, is created. Consider tableau (28).

\[(28) \quad L \approx Pr \gg No-PWd^*\]

<table>
<thead>
<tr>
<th>Input:</th>
<th>kampo</th>
<th>santo</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [{kám}p} {sánt}o} {PWd} {PWd}</td>
<td>$\approx$ Pr</td>
<td>*!</td>
</tr>
<tr>
<td>b. [{kám}p} {sánt}o} {PWd} {PWd} {PWd}</td>
<td>$\approx$ Pr</td>
<td>*</td>
</tr>
</tbody>
</table>

Candidate (28a) is ruled out by $L \approx Pr$ for it leaves the new MWd* unlicensed. Note how the two inner MWd's are shelled within a PWd each, but MWd*, the outermost MCat, is not. Candidate (28b), on the other hand, opts to violate lower-ranking No-PWd* so that it can provide a new PWd* that licenses the category MWd*. The ranking $L \approx Pr \gg No-PWd^*$ reflects the fact that, in compounding, licensing MWd's is preferred over avoiding the addition of a new layer of prosodic structure. In other words, projecting a PWd* is not as bad as leaving a morphological word unlicensed. This is what distinguishes candidate (28a) from candidate (28b). In blending, however, the order of these principles is reversed.
(29) MWd outnumbers PWd in blending:

The data consistently show that a blend contains a single PWd despite the fact that there are three MWd's in it. This behavior of blends indicates that $LX \approx PR$ is outranked by NO-PWd*. Under the ranking NO-PWd* $>> LX \approx PR$, the optimal blended form must find a way to license the three MWd's without projecting a PWd*. To show how this is accomplished, I point out a consistent pattern followed by Spanish blends. In general, the source forms of Spanish blends are not the same size. The shorter source form of a blend may start at the same point as the longer one, so that the left edge of its initial syllable matches the left edge of the initial syllable of the longer source form.

(30) Both source forms start at the same point:

a. **piedra**  
   piedagógica  
   'stone'
   '(Universidad) Pedagógica (Nacional de Colombia)'

   ★ **piedragógica**  
   'UPNC, whose students have a reputation for confronting the police by throwing stones at them'
b. sucio
socialista
➢ socialista
'filthy socialist'

c. burro
burocracia
➢ burrocracia
'donkey bureaucracy'

Alternatively, the shorter source form of a blend may end at the same point as the longer one, so that the right edge of its final syllable matches the right edge of the final syllable of the longer source form.

(31) Both source forms end at the same point:

a. perro
mosquetero
➢ mosquetero
'dog-musketeer'

b. joda
paradoja
➢ paradoja
'an irritating paradox'

c. gol
futbol
➢ futbol
'football (soccer) magazine published in Spain'

These patterns are obviously related to alignment. By starting or ending at the same point, the source forms of a blend manage to get a greater number of MWd-edges aligned with PWd-edges. To capture this fact, I propose to reformulate the $L_X \approx PR$ in terms of alignment. $ALIGN-(M\Leftrightarrow P)$ accomplishes the same effect as $L_X \approx PR$, plus it has
the advantage of allowing finer distinctions among competing candidates because prosodic licensing is measured edge by edge rather than category by category.

(32) \textbf{ALIGN(M\leftrightarrow P)}: \textit{Align MWd-edges with PWd-edges}

Given \text{MWd}_i, \text{MWd}_j, \ldots \text{ and PWd}_i, \text{PWd}_j, \ldots

Align (\text{MWd}_\alpha, E, \text{PWd}_\alpha, E)

Edge \text{E} of category \text{MWd}_\alpha is aligned with the corresponding edge of category \text{PWd}_\alpha.

This constraint quantifies over the two edges of a MWd. When both edges of \text{MWd}_\alpha match the corresponding edges of \text{PWd}_\alpha, MCat is fully-licensed. When only one edge of \text{MWd}_\alpha matches the corresponding edge of \text{PWd}_\alpha, it is not that MCat is unlicensed. Rather, it is partially-licensed.

With three MWd's but only one PWd to license them, the source forms of a blend must array in such a way that they can maximize the use of the two PWd-edges that are available. This explains the patterns exhibited by the examples in (30) and (31), which are illustrated in (33) and (34) below.

(33) \textbf{Left Alignment}:

'UPNC, whose students have a reputation for confronting the police by throwing stones at them'
In (33), only one of the six MWd-edges is misaligned. Note how the left edges of the three MWd's match the left edge of the PWd since all three MWd's dominate the segment /p/. At the right periphery, two MWd-edges match the right edge of the PWd. Only the right edge of the MWd \{piedra\} is caught in the middle of the blend. The mirror-image of this situation arises for blends whose source forms end at the same point. In (34), it is the left edge of the MWd \{gól\} that is misaligned. The reader can confirm that all other MWd-edges match a PWd-edge.

(34) Right Alignment:

\[
\begin{array}{c}
\text{MWd} \quad \text{MWd} \\
\text{'soccer'} \quad \text{gól} \\
\text{MWd*} \\
\text{'a soccer magazine published in Spain'}
\end{array}
\]

These patterns suggest that the locus of blending is determined by \textsc{Align(M Ù P)}. Although this constraint is dominated by \textsc{No-PWd*}, the optimal blended form must minimize the number of \textsc{Align(M Ù P)} violations. Only if both source forms start or end at the same point can \textsc{Align-}-(M Ù P) be optimally satisfied. In this way, five out of six MWd-edges get to be aligned with PWd-edges. In tableau (35) below, candidate (35a) achieves perfect compliance with \textsc{Align(M Ù P)} by projecting a \textsc{PWd*} whose edges match the edges of MWd*. This, however, runs afoul of top-ranking \textsc{No-PWd*}, which puts (35a) out of competition. Candidate (35b) keeps from projecting a \textsc{PWd*} in order to satisfy \textsc{No-PWd*}, but this gives rise to two violations of \textsc{Align(M Ù P)} because the
edges of the category MWd* are not abutted by the edges of a PWd*. Candidate (35c) attempts to maximize the use of PWd-edges to achieve better alignment, but still two MWd-edges remain misaligned as a consequence of the fact that the two source forms do not start or end at the same point. Candidate (35d) is the winner because it maximally exploits the use of the PWd-edges available for alignment. By having the two source forms end at the same point, this candidate achieves the best alignment possible. Despite the fact that ALIGN(M ⇔ P) has to be violated to a certain degree so that the higher-ranking constraint NO-PWd* is respected, its role is decisive in the selection of the optimal candidate for blending. The minimal violation of this constraint makes the difference between the winner, (35d), and the most serious competing candidates (35b,c).

(35) \[ \text{NO-PWd*} \gg \text{ALIGN(M ⇔ P)} \]

<table>
<thead>
<tr>
<th>Source forms: futbol gol</th>
<th>NO-PWd*</th>
<th>ALIGN(M ⇔ P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [ {{fútbol}} [{gól}] ]</td>
<td>* !</td>
<td></td>
</tr>
<tr>
<td>b. {{fútbol}} [{gól}]</td>
<td>* ! *</td>
<td></td>
</tr>
<tr>
<td>c. [{fútbol} {gól}]</td>
<td>* ! *</td>
<td></td>
</tr>
<tr>
<td>d. {{fut} gól}</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

ALIGN(M ⇔ P) is also involved in the emergence of ambimorphemic segments (see section 3.3 below). Under the ranking NO-PWd* \gg ALIGN(M ⇔ P), one of the source forms is forced to overlap upon the other one. This is because with six MWd-edges to be aligned but only two PWd-edges available, MWd-edges must share PWd-edges (33, 34). In this way several MWd-edges may get aligned with a single PWd-edge at a time. But
for this to be possible, the segments associated with one source form must overlap upon the segments associated with the other one.

The choice between $\text{ALIGN}(M P)$ and $LX = Pr$ is not a trivial one. $\text{ALIGN}(M P)$ is able to distinguish between two candidates that do not provide a PWd for every MWd, but whereas one of them maximizes the use of the PWd-edges available, the other one does not. Such is the case of candidates (35c) and (35d) above, which are reintroduced below as (36a) and (36b), respectively. Compare the marks given to these candidates when evaluated by $LX = Pr$ with the marks they receive when evaluated by the alignment constraint $\text{ALIGN}(M P)$.

(36) $\text{ALIGN}(M \Leftrightarrow P)$ vs. $LX = Pr$

<table>
<thead>
<tr>
<th>Source Forms: piedra pedagoxika</th>
<th>$LX = Pr$</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ${ { \text{piedra} } { \text{pedagóxika} } }$</td>
<td>* *</td>
</tr>
<tr>
<td>b. ${ { \text{piedra} } { \text{góxika} } }$</td>
<td>* *</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source Forms: piedra pedagoxika</th>
<th>$\text{ALIGN}(M \Leftrightarrow P)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ${ { \text{piedra} } { \text{pedagóxika} } }$</td>
<td>* * !</td>
</tr>
<tr>
<td>b. ${ { \text{piedra} } { \text{góxika} } }$</td>
<td>*</td>
</tr>
</tbody>
</table>

According to $LX = Pr$, candidates (36a) and (36b) are equally as bad because both of them provide only one PWd for the three MWd's contained in these output forms. $\text{ALIGN}-(M \Leftrightarrow P)$, on the other hand, says that candidate (36b) is better than candidate (36a) because the former has a greater number of MWd-edges that are properly aligned with a PWd-edge. In other words, the three morphological words are better licensed in (36b)
than they are in (36a). The advantage of ALIGN(M ⇔ P) is that it evaluates output forms edge by edge. This enables it to make finer distinctions between candidates. The problem with LX ≈ PR is that it looks at two edges at a time to be able to identify one PWd per MWd. Consequently, LX ≈ PR can not be as precise as ALIGN(M ⇔ P). This justifies my choice to use ALIGN(M ⇔ P) rather than LX ≈ PR when accounting for blending.

Summing up, the ranking of the constraints NO-PWd* and ALIGN-(M ⇔ P) with respect to one another determines whether the optimal output form of an input containing two MWd's will be a compound or a blend.

(37)  

a. ALIGN(M ⇔ P) >> NO-PWd* = Compounding
b. NO-PWd* >> ALIGN(M ⇔ P) = Blending

These two possible rankings can occur in the same language yielding different results in the combination of free morphemes. The fact that compounding is a lot more productive than blending indicates that (37a) is the most common ranking, whereas (37b) is less productive crosslinguistically. One reason for the lower productivity of morphological blending in comparison to compounding may be the damage to faithfulness constraints entailed by the blending of the two source forms under a single PWd. This point is developed in the following sections. Faithfulness constraints are as violable as all other constraints, but they are never totally bottom-ranking because languages promote input/output faithfulness so that output forms are not extremely opaque but rather a reflection of their input that is as transparent as possible. The fact that morphological blending can impinge greatly on the faithfulness that an output should
maintain with respect to its input may well be one reason why the ranking in (37a) is more frequently exploited than that in (37b). Another factor that bears on the lower productivity of morphological blending is identified in the following section. Morphological blending is the result of associating output forms and not of regular input/output derivations.

### 3.3.2 Output-to-output correspondence in morphological blending

A distinguishing property of blends is that they replicate the prosodic structure of one of the source forms. As Janda (1986, p. 16) points out, 'there seems to be a factor at work such that a blend is good to the extent that it mirrors the prosodic structure of one of its components'. In Spanish, the PWd that subsumes the blend is equivalent to the PWd that subsumes its longer source form.

\[
(38) \begin{align*}
\text{a. } [(cá.ca)] & \quad [\text{co.ca.}(i.na)] & \quad \text{Source forms} \\
[\text{ca.ca.}(i.na))] & \quad \text{Blend} \\
\text{b. } [(jó.da)]_{\text{PWd}} & \quad [\text{pa.ra.}(dó.ja)]_{\text{PWd}} & \quad \text{Source forms} \\
[\text{pa.ra.}(jó.da)]_{\text{PWd}} & \quad \text{Blend}
\end{align*}
\]

Considering that syllable and foot structures are derived prosodic properties, it is rather puzzling that they are copied from the input. Recent proposals within Correspondence Theory (Kentowicz 1994, McCarthy and Prince 1995, Benua 1995) have advanced the hypothesis that two output forms may be related to one another through a correspondence relationship that demands their identity. The claim is that in the same way that there is a correspondence relationship that holds between a Base and
its Reduplicant (e.g. reduplicative morphology), or between an Input Form and its corresponding Output Form (e.g. regular derivational processes); there may also be a correspondence relationship that relates two output forms. I argue that the correspondence relationship that holds between a blended form and its source forms is an instance of this type of correspondence. Overall, there are two correspondence relationships implicated in the generation of blends.

(39) **Morphological Blending Model:**

\[
\begin{array}{ccccc}
\text{Input} & \uparrow & \downarrow & \text{Input} \\
\downarrow & \uparrow & \text{Output} & \downarrow & \text{Output} \\
\downarrow & \uparrow & \text{Blend} & \downarrow & \uparrow \\
\end{array}
\]

First, there is an input-to-output correspondence relationship that governs the derivation of regular output forms. This first dimension constitutes a domain equivalent to the core grammar, where the most productive morphological processes occur (e.g. concatenative morphology). Compounding, for example, takes place within this dimension. The ranking \( \text{ALIGN}(M \leftrightarrow P) \gg \text{NO-PWd}^* \), that was established in the previous section, is part of this domain.

---

5 Yoneyama (1996) proposes a similar model to account for Japanese blends. She also concludes that blended forms must be derived from output forms since the first part of a Japanese blend coincides with a bimoraic foot that is copied after one of the source forms.
In tableau (40) below, candidate (40a) is ruled out by ALIGN-(M⇔P) because all three MWd's are unlicensed. ALIGN(M⇔P) also rules out candidates (40b) and (40c) because they also fail to license MWd's. Under the ranking ALIGN(M⇔P) >> NO-PWd*, the optimal output form is one that provides a PWd for every MWd (40d).

(40) ALIGN(M⇔P) >> NO-PWd*

<table>
<thead>
<tr>
<th>Input:</th>
<th>ALIGN(M⇔P)</th>
<th>NO-PWd*</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. {campo} {santo}</td>
<td><em>!</em>***</td>
<td></td>
</tr>
<tr>
<td>b. {campo} [{sánto}]_pwd</td>
<td><em>!</em></td>
<td></td>
</tr>
<tr>
<td>c. [{câmpo}]_pwd [{sânto}]_pwd</td>
<td><em>!</em></td>
<td></td>
</tr>
<tr>
<td>d. * [{câmpo}]_pwd [{sânto}]_pwd [{pwd}]_pwd*</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

But crucially, there is also an output-to-output correspondence relationship, which constitutes the dimension where morphological blending occurs. Output forms may serve as Source Forms (SF’s) for other processes. Blending is one of the processes that use output forms as SF’s in order to generate new output forms.

(41) {ínocente} {gente} Input

\[\text{I/O-Correspondence}\]

\[\text{Output / SF’s}\]

\[\text{O/O-Correspondence}\]

\[\text{Output / B}\]

In this case, the new output form is a blend (B), which is selected by the output-to-output correspondence constraints among all the possible candidates that result from
combining the two SF’s. It is within this output-to-output correspondence dimension that
the constraint ranking NO-PWd* >> ALIGN(Mrpm) is operative forcing the combination
of the two SF’s under a single PWd. By positing a correspondence relationship between
SF and B, this model explains why B mirrors derived properties of SF. If B were not
allowed access to the information encoded in SF, the resemblance between these forms
would be simply accidental. But if B and SF are both output forms which are required to
be faithful, their resemblance is to be expected. In (41) above, for example, B
\[ \{\{i.no,\}gén.te\}\] faithfully mirrors the prosodic structure of SF \[\{i.no.cén.te\}\]. First,
these two forms have the same number of syllables: four syllables each. Second, the fact
that they obey the same stress pattern suggests that they have the same foot structure. In
other words, B is prosodically identical to one of its SF’s. This is not just a coincidence
but a consistent property of blends that can only make sense if B and its SF’s are both
output forms that are directly related.

In order to account for this prosodic identity between blends and their source
forms, I use the correspondence constraints MAX and DEP. MAX(SF-B, σ) and DEP(SF-B,
σ) are the specific versions of these constraints that promote identity between SF and B in
terms of the number of syllables.

(42) MAX(SF-B, σ): Syllabic Maximization of the Source Forms
    Every syllable in SF has a correspondent in B.

(43) DEP(SF-B, σ): Syllabic Dependence on the Source Forms
    Every syllable in B has a correspondent in SF.
Since \( B \) never contains any epenthetic syllables, the constraint \( \text{DEP}(SF-B, \sigma) \) is clearly undominated. Satisfaction of \( \text{MAX}(SF-B, \sigma) \) is less evident due to overlapping, but it should be taken into account that a single syllable in \( B \) may play a double role as the correspondent of two syllables in \( SF \). This makes it possible for \( B \) to fully comply with \( \text{MAX}(SF-B, \sigma) \). In the blend \textit{inogente}, for instance, the last two syllables act as correspondents not only of the two syllables of \( SF_2 \textit{gente} \) but also of the last two syllables of \( SF_1 \textit{inocente} \). Recall that the source forms must array in such a way so that they can maximize the use of the two PWd-edges available for alignment. This forces \( SF_2 \) (the shorter source form) to overlap upon one of the peripheries of \( SF_1 \) (the longer source form). Nonetheless, every syllable in \( SF \) is still represented by a syllable in \( B \) and vice versa.

\[
\begin{align*}
SF_1 & \quad [i]_{\sigma_1} [n o]_{\sigma_2} [c e n]_{\sigma_3} [t e]_{\sigma_4} \\
SF_2 & \quad [g e n]_{\sigma_a} [t e]_{\sigma_b} \\
B & \quad [i]_{\sigma_1} [n o]_{\sigma_2} [g e n]_{\sigma_3/a} [t e]_{\sigma_4/b}
\end{align*}
\]

Under the blending model I propose, this prosodic resemblance between a blend and its source forms follows directly from the correspondence relationship that relates these output forms.

Allophonic resemblance between two output forms has also been presented in support of OO-correspondence (McCarthy and Prince 1995, Benua 1995). In Spanish blends, morphophonemic changes like diphthongization constitute additional evidence that \( B \) is required to be faithful to an output form \( SF \). Consider the blend \textit{piedragógica}
and its SF’s *piédra* and *pedagógica*. *SF* *piédra* is an example of diphthongization, a process whereby the mid-vowels /e/ and /o/ become [je] and [we], respectively.

(45) a. p[e].drús.ko ‘piece of stone’  
    a.p[e].dre.ár ‘to stone’
    em.p[e].drár ‘to cover with stone’
    b. p[jé].dra ‘stone’

In order to capture the fact that the output form in (45b) is related to the output forms in (45a), one must assume an underlying form whose root vowel is /e/. Under stress, this mid-front vowel is realized as a diphthong.

(46) p /e/ d r a Input

p [j é] d r a Output

Given that diphthongization requires the target vowel to be stressed and that stress is limited to a right-edge three-syllable window, the input for blending may not be the abstract form *p/e/dra* because that would result in the unattested form *pedragóxika*. It must be then that, rather than the abstract form *p/e/dra*, the relevant SF is the output form *p[jé]dra*. Otherwise, there would be no explanation as to why the input segment /e/ should be realized as [je] in the blend, given that this segment is unstressed in B *

Lexical stress in Spanish may fall on the ultimate, penultimate or antepenultimate syllable but not beyond. Only through the adjunction of enclitic pronouns to verbal forms, stress may exceptionally appear on the fourth syllable from the end of the word, but never on the fifth or farther away: *entréga* ‘hand in, imp.’, *entrégamel* ‘hand it in to me’, *entregamelo*
The representation in (47) illustrates the IO and OO-Correspondence relationships operative in the generation of the correct form of this example. According to (47), the reason why B contains the diphthong [je] is because B must mimic SF. Since the diphthong is present in SF, B must replicate this feature.

Other than morphophonemic changes, blends do not seem to retain the allophonic realization of the segments in SF. Consider for example the blend jetografía 'a picture of an ugly face' derived from the SF's jeta 'mouth of an animal' and fotografía 'photograph'. Inter-vocalic /g/ is realized as the fricative [ɣ] in both SF and B. However, this frication in B need not depend on SF, since B has the right context for /g/ to undergo the change. I have been unable to find any examples where B copies the allophonic realization of a segment in SF even when B lacks the appropriate context. Lacking this type of evidence, one must conclude that simple allophonic realization does not require an output-to-output correspondence relationship between SF and B. However, resemblance in prosodic structure and mimicry in morphophonemic changes like diphthongization constitute robust support for this proposal.
Now that an output-to-output correspondence relationship has been motivated for the process of morphological blending, the task ahead is to identify the constraints that govern this dimension and to establish their ranking. The first step has already been taken. The ranking NO-PWd* >> ALIGN(M$\leftrightarrow$P) was motivated in the previous section. This constraint ranking is responsible for the combination of the two SF’s of a blend within a single prosodic word. Next, I study the role of the correspondence constraints MAX and DEP as well as their interaction with other constraints in order to determine the degree to which the identity between B and its corresponding SF’s is preserved. Section 3.3.3 is devoted to this task.

3.3.3 Preservation of (SF-B)-identity

In morphological blending, it is never the case that the blended form contains segments that are not present in its source forms. In other words, B never contains segments that do not have a correspondent in SF. This observation suggests that the correspondence constraint DEP(SF-B, seg), which holds between SF and B at the segmental level, is undominated. On the other hand, it is not unusual to find blends in which some segments that are present in their source forms are left out from the amalgam. Put differently, it is possible that B does not have a correspondent for every segment in SF. It appears then that the correspondence constraint MAX(SF-B, seg) is dominated by some other constraint(s). Whereas the status of DEP(SF-B, seg) as an undominated constraint works towards the achievement of (SF-B)-Identity, the fact that MAX(SF-B) is dominated works to the detriment of this identity. In this section, I explore how the constraint
MAX(SF-B, seg) interacts with other constraints that are active in the output-to-output correspondence dimension where morphological blending takes place.

### 3.3.3.1 Ambimorphemic segments

Although MAX(SF-B, seg) appears to be dominated, there is a way in which (SF-B)-Identity may be salvaged. Certain segments in B may stand in correspondence with two segments in SF, one in SF<sub>1</sub> and the other one in SF<sub>2</sub>. Ambimorphemic segments like these, allow B to avoid violations of the constraint MAX(SF-B, seg).<sup>7</sup> However, ambimorphemic segments do come at a cost. To develop this proposal, I make use of the constraint MORPHDIS proposed in McCarthy and Prince (1995).

(48) **MORPHDIS:** *Morphemic Disjointness*

\[
x \subset M_i \rightarrow x \not\subset M_j, \text{ for instances of morphemes } M_i \neq M_j \text{ and for } x \text{ a specific segmental (autosegmental) token.} \]

“Distinct instances of morphemes have distinct contents, tokenwise.”

**MORPHDIS** militates against ambimorphemic segments. Following McCarthy and Prince (1995), a morpheme stands in a relation with a set of segmental units. These segments constitute the EXPONENCE of that morpheme, which is usually given in the lexicon under the entry corresponding to the morpheme in question. The forms *piedra* and *pedagogika*, for example, represent morphemes that stand in a relation of exponence with the segments they are associated with.

---

<sup>7</sup> For an alternative account that does not recognize morpheme overlapping see Bat-El (1996). This author proposes that blending requires a Designated Identical Segment that must be present in the two source forms but he does not allow ambimorphemic segments.
Every segment x associated with a morpheme M is a MORPHEME ASSOCIATE, written: \( x \subseteq M \). The segments /p, e, d, r/ are morpheme associates of morpheme \( \varphi_1 \) in (49). Similarly, the segment /a/ is a morpheme associate of \( \varphi_2 \), the segments /p, e, d, a, g, o, x/ are morpheme associates of \( \varphi_3 \) and so on. Then, \( \{p, e, d, r\} \subseteq \varphi_1 \), \( \{a\} \subseteq \varphi_2 \), \( \{p, e, d, a, g, o, x\} \subseteq \varphi_3 \), etc. Usually, in the input-to-output correspondence dimension, every morpheme associate has its own correspondent in the output form. There is a one-to-one relation between input and output segments by which a segment in the input has one an only one correspondent in the output and vice versa.

This type of one-to-one relation is enforced by the correspondence constraints UNIFORMITY and INTEGRITY (McCarthy and Prince, 1995).

(51) **UNIFORMITY:** *No Coalescence*

No element in \( S_2 \) has multiple correspondents in \( S_1 \).

For \( x, y \in S_1 \) and \( z \in S_1 \), if \( x \not\sim z \) and \( y \not\sim z \), then \( x = y \).

(52) **INTEGRITY:** *No Breaking*

No element in \( S_1 \) has multiple correspondents in \( S_2 \).

For \( x \in S_1 \) and \( w, z \in S_1 \), if \( x \not\sim w \) and \( x \not\sim z \), then \( w = z \).
In Spanish, INTEGRITY is not an undominated constraint since diphthongization is possible. However, neither INTEGRITY nor UNIFORMITY are bottom ranking constraints because a one-to-one relation between input and output segments is the usual case in this language. Therefore, in the input-to-output correspondence dimension, INTEGRITY and UNIFORMITY must rank high enough as to enforce a one-to-one relation between the input and the output segments. In regular compounding, for example, a one-to-one correspondence relation is highly enforced.

Nonetheless, in the output-to-output correspondence dimension, a two-to-one relation between SF-segments and their B-correspondents may actually be preferred for certain segments. Although I will modify this assumption later on, for the immediate purpose here I assume that two segments in SF may share a single correspondent in B provided they are featurally-identical. This is what I claim is happening in morphological blending and what allows an alternative to concatenative morphology: morpheme overlapping. Let $x$ be a segment in SF$_1$ and $y$ be a segment in SF$_2$. If $x$ and $y$ are featurally-identical, then $x$ and $y$ may share a single correspondent in B. The constraint M	extsc{orphDis} defined above penalizes this two-to-one type of correspondence

---

8 Diphthongization of Spanish mid-vowels is an instance of a one-to-many correspondence relation between an input segment /e/ or /o/ and two output correspondents [je] or [we], respectively.
relation typical of ambimorphemic segments. If the segment /p/ is a morpheme associate of morphemes \( \varphi_1 \) and \( \varphi_3 \), and it is the case that morphemes \( \varphi_1 \) and \( \varphi_3 \) are different morphemes (\( \varphi_1 \neq \varphi_3 \)), then the segment /p/ must occur in two different instances so that \( \varphi_1 \) and \( \varphi_3 \) can actually be distinct tokenwise. Obviously, this condition may be violated in morphological blending where two morphemes may overlap upon the same segment provided the segments in question are featurally-compatible. The following representation illustrates this two-to-one relation for the segments \( p, e, d, a \) in the blending of the source forms \textit{piedra} and \textit{pedagoxika}.

Phonemic compatibility between the two source forms is being used in order to avoid MAX(SF-B, seg) violations. In (54), none of the segments in SF\(_1\) or SF\(_2\) has to be sacrificed, precisely because of the possibility for two segments in SF to be represented by a single correspondent in B. This leads to the conclusion that the constraint MAX(SF-B, seg) dominates the constraint MORPHDIS. (Ambimorphemic segments appear underlined)
Phonetically, there is no difference between candidates (55a) and (55b). However, they are formally different because they participate in different correspondence relationships that are observed in their evaluation. In candidate (55a), the segments p, e, d, a stand in correspondence with the segments p, e, d, a of SF1 piedra exclusively. This means that the segments p, e, d, a of SF2 pedagóxika do not have correspondents in B. Therefore, this candidate incurs four violations of MAX(SF-B, seg). Candidate (55b) is preferred over (55a) because it avoids all violations of higher-ranking MAX(SF-B, seg) by allowing B-segments p, e, d, a to serve as correspondents for both occurrences of these segments in SF1 piedra and SF2 pedagóxika.

However, when the phonemic compatibility between the two source forms is not as extensive, it appears that the loss of some Sf-segments can not be helped (e.g. dedocracia < dedo + democracia). Given that the source forms blend despite the disappearance of segmental material, the constraints NO-PWd* and ALIGN(M\(\Leftrightarrow\)P) must dominate MAX-(SF-B, seg). The ranking of the constraints identified so far is the following.

(55) \(\text{MAX(SF-B, seg)} \gg \text{MORPHDIS}\)

<table>
<thead>
<tr>
<th>SF: {{\text{piédra}}} {{\text{pedagóxika}}}</th>
<th>MAX(SF-B, seg)</th>
<th>MORPHDIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. {{\text{piedra}}} {{\text{góxika}}}</td>
<td>** * * *</td>
<td></td>
</tr>
<tr>
<td>b. {{\text{piedra}}} {{\text{góxika}}}</td>
<td></td>
<td>ped a</td>
</tr>
</tbody>
</table>

(56) **Constraint Ranking Responsible for Morphological Blending:**

\(\text{NO-PWd*} \gg \text{ALIGN-(M}\(\Leftrightarrow\)\text{P}) \gg \text{MAX-(SF-B, seg)} \gg \text{MORPHDIS}\)
The partial ranking $\text{MAX}(\text{SF-B, seg}) \gg \text{MORPHDis}$ serves the purpose of minimizing the damage to (SF-B)-Identity caused by the blending of the source forms. Tableau (57) illustrates the selection of the optimal output form of a blend whose source forms are extensively compatible. Each one of the underlined segments of candidate (57d) stands in correspondence with two segments in $\text{SF}$. They are the segments /b, e, t, a/ morpheme associates of $\varphi_1 \{a, n, a, l, f, a, b, e, t, a\}$ and also the segments /b, e, t, a/ morpheme associates of $\varphi_2 \{b, e, s, t, i, a\}$.

(57) $\text{NO-PWd}^* \gg \text{ALIGN-(M$\Leftrightarrow$P)} \gg \text{MAX}(\text{SF-B, seg}) \gg \text{MORPHDis}$

<table>
<thead>
<tr>
<th>SF:</th>
<th>$[{\text{analfabèta}}{\text{béstia}}}]$</th>
<th>NO-PWd*</th>
<th>ALIGN-(M$\Leftrightarrow$P)</th>
<th>MAX-(SF-B)</th>
<th>MORPHDis</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>$[{\text{analfabèta}}{\text{béstia}}}]$</td>
<td>$*!$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>$[{{\text{analfèta}}{\text{béstia}}}]$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>$[{{\text{analfà}}{\text{béstia}}}]$</td>
<td></td>
<td></td>
<td>beta</td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>$\varnothing$</td>
<td></td>
<td></td>
<td>beta</td>
<td></td>
</tr>
</tbody>
</table>

By violating MORPHDis, candidate (57d) accomplishes total satisfaction of the correspondence constraint $\text{MAX}-(\text{SF-B, seg})$, which outranks MORPHDis. In candidate (57c), on the other hand, the segments /b, e, t, a/ are exclusive correspondents of the morpheme associates /b, e, t, a/ of $\varphi_2 \{b, e, s, t, i, a\}$. This means that the morpheme associates /b, e, t, a/ of $\varphi_1 \{a, n, a, l, f, a, b, e, t, a\}$ have no output correspondents whatsoever. These constitute four fatal violations of $\text{MAX}-(\text{SF-B, seg})$. Additionally, this lack of correspondents costs candidate (57c) an extra misalignment because its left edge can not coincide with the left edge of the PWd. These two violations of $\text{ALIGN(M$\Leftrightarrow$P)}$ are plenty to rule out candidate (57c). Top-ranking NO-PWd* rules out candidate (57a) on
the first run, even if this candidate perfectly complies with ALIGN(M⇔P), MAX(SF-B, seg) and MORPHDIS. Candidate (57b) contains two misaligned edges and it is also put out of competition by the constraint ALIGN(M⇔P).

The interaction of the constraints MAX(SF-B, seg) and MORPHDIS explains why phonemic compatibility between the source forms of a blend is a factor that bears on its well-formedness. For every pair of segments shared by the two source forms, the optimal output form can avoid one violation to the constraint MAX(SF-B, seg) by means of exploiting ambimorphemicity. Consequently, the more pairs of segments the source forms have in common, the more MAX(SF-B, seg) violations can be avoided. This yields the gradient felicity of blends that scholars such as Pharies and Janda pointed out in their work. Because phonemic compatibility helps B achieve optimal identity with respect to SF, it is no longer a mystery why a blend is better if its source forms have more segments in common. Now this important property of blends is not just intuitively perceived but formally expressed. With MAX(SF-B, seg) dominating MORPHDIS, the greater the phonemic compatibility between the SF's, the more similar to them may B remain.

This issue of phonemic compatibility is also related to the lower-productivity of morphological blending in comparison to regular compounding. The fact that the only way of enforcing perfect identity between SF and B is if the two SF's are highly-compatible in terms of segmental units is a factor that may limit to a certain extent the number of morphemes that can participate in morphological blending. Such a restriction does not apply to regular compounds because faithfulness is never at risk under the constraint ranking ALIGN(M⇔P) >> No-PWd*. As a consequence of this, any two free morphemes can participate in regular compounding regardless of their segmental make-
up. In morphological blending, on the other hand, the chances that a morpheme $\phi_1$ may combine with a morpheme $\phi_2$ are reduced by the contingency that $\phi_1$ and $\phi_2$ have segments in common, so that closer identity between $SF$ and $B$ can be achieved through the only available means: ambimorphemicity. One can entertain the idea that satisfaction of $\text{MAX}(SF-B, \text{seg})$ could also be achieved by candidates that preserve every single $SF$-segment without exploiting ambimorphemicity. However, candidates of this sort run afoul of $\text{ALIGN}(M \Leftrightarrow P)$ as illustrated by (57b) above.

### 3.3.3.2 Non-preservation of the word marker

Spanish words that belong to the major categories noun, adjective and adverb typically end in a morphological element known as a Word Marker (WM). The most common WM’s are /o/ and /a/, but they are by no means the only ones. Harris (1991) identifies seven different WM’s, all of which are characterized by the fact that they can not be followed by another suffix, derivational or inflectional, except for the plural morpheme -$s$. In regards to this property of WM’s, blends exhibit an interesting behavior. When the SF’s are aligned at their left margins, the WM of the shorter SF is not allowed to appear in the output form. Consider the following examples where WM’s appear underlined.

(58) **Loss of the WM of one of the SF’s:**

<table>
<thead>
<tr>
<th>a. b u r r o c r a c i a</th>
<th>‘bureaucracy’</th>
</tr>
</thead>
<tbody>
<tr>
<td>b u r r o</td>
<td>‘donkey’</td>
</tr>
<tr>
<td>➢ b u r r o c r a c i a</td>
<td>‘stupid bureaucracy’</td>
</tr>
</tbody>
</table>
b.  \textit{cocaína} \textit{caca}  \\
\textit{cocaine'}  \\
\textit{feces'}  \\
\textit{filthy cocaine'}

c.  \textit{biblioteca} \textit{charla}  \\
\textit{library'}  \\
\textit{chat'}  \\
\textit{a library where people chat instead of reading or studying'}

d.  \textit{bicicleta} \textit{burro}  \\
\textit{bicycle'}  \\
\textit{donkey'}  \\
\textit{small bicycle'}

For examples (58a, b), it could be argued that the underlined segments /o/ and /a/ are ambimorphemic and that the WM’s of the SF’s \textit{burro} and \textit{caca} have a correspondent in their respective output forms. However, in blends like (58c, d), where the WM’s of the shorter SF’s do not coincide with a segment in the longer SF’s, it is evident that the WM is not preserved in the output form (Note that the segment -\textit{o} of \textit{biblio} may not be a word-marker because \textit{biblio} is a prefix, not a morphological word). My claim is that WM’s may only be preserved when they are word-final. In order to account for this, I propose that Spanish WM’s are subject to the following constraint.

(59)  \textbf{ALIGN-WM:}

\textit{Align Word-Markers}

\textbf{Align (WM, R, PWd, R)}  \\
The right edge of a WM is aligned with the right edge of a PWd.

The data show that when the right edge of a WM does not match the right edge of a PWd, such a WM does not surface in the blend. Since this leaves a segment in SF without a correspondent in B, the constraint \textbf{ALIGN-WM} must dominate \textbf{MAX(SF-B, seg)}.  

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By transitivity, ALIGN-WM must also dominate MORPHDIS, since the latter was proved to be outranked by MAX(sf-B, seg). Tableau (60) below illustrates the interaction of these constraints in the selection of the optimal output form for the blend burricleta.

(60) ALIGN-WM >> MAX(sf-B, seg) >> MORPHDIS

<table>
<thead>
<tr>
<th>SF:</th>
<th>[ágina]</th>
<th>[icion</th>
<th>ALIGN-WM</th>
<th>MAX(sf-B, seg)</th>
<th>MORPHDIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[bungro]</td>
<td>clento</td>
<td>o!</td>
<td>ici</td>
<td>b</td>
</tr>
<tr>
<td>b.</td>
<td>[bungro]</td>
<td>clento</td>
<td>ic o</td>
<td>b</td>
<td></td>
</tr>
</tbody>
</table>

Candidate (60a) incurs a fatal violation of ALIGN-WM because the WM of the SF \textit{burro} ends up caught in the middle of B, away from the right edge of the PWd. Candidate (60b), on the other hand, opts for dropping the non-peripheral WM to avoid this violation of ALIGN-WM. By doing this, it achieves better satisfaction of the demands of the morphophonological constraints.

3.3.4 Determination of the precise locus of blending

In section 3.3.1, the interface constraint ALIGN(M ⇔ P) was identified as one of the principles governing the locus of morphological blending. But ALIGN(M ⇔ P) by itself is not enough to determine the exact locus of blending. This constraint can be optimally satisfied by output forms where the two morphological words start or end at the same point. This, however, can only narrow down to two the combinatorial possibilities between the source forms. Consequently, ALIGN(M ⇔ P) is unable to decide what is the precise locus of blending. Nonetheless, when (SF-B)-Identity is also taken into consideration, there is only one optimal way in which the source forms of a blend may
combine. To motivate this point, reconsider the blend *piedragoxika*. In this example, it is clear that the shorter source form *piedra* appears towards the left rather than towards the right edge of the amalgam because it is towards the left margin that the form *pedagoxika* has the greatest phonemic compatibility with the form *piedra*. This is important to understand why the optimal output form is *piedragoxika* and not an apparently equally good competing candidate such as *pedagopiedra*. Notice that even though both of these forms respect alignment as optimally as possible (see 61), only the former exploits the phonemic compatibility between the two source forms in the best way possible to avoid incurring unjustified MAX(SF-B, seg) violations. The emerging generalization is that alignment and phonemic compatibility are properties that join forces to determine the precise locus of blending. These findings are illustrated in the following partial tableau, which leaves out the constraint NO-PWd*. Only candidates that satisfy top-ranking NO-PWd* are considered in (61).

(61) \[\text{ALIGN}(M \leftrightarrow P) \gg \text{MAX}(\text{SF-B, seg}) \gg \text{MORPHDIS}\]

<table>
<thead>
<tr>
<th>SF: [{\text{piédra}} {\text{pedagóxika}}]</th>
<th>ALIGN(M \leftrightarrow P)</th>
<th>MAX(SF-B)</th>
<th>MORPHDIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [{\text{piédra}} {\text{góxika}}]</td>
<td>*!</td>
<td>peda</td>
<td></td>
</tr>
<tr>
<td>b. {{\text{piedra}} {\text{góxika}}}</td>
<td>*</td>
<td>peda</td>
<td></td>
</tr>
<tr>
<td>c. {{\text{pedago}} {\text{piédra}}}</td>
<td>*</td>
<td>x!k</td>
<td>i a</td>
</tr>
<tr>
<td>d. {{\text{pedago}} {\text{piédra}}}</td>
<td>*!</td>
<td>xika</td>
<td></td>
</tr>
</tbody>
</table>

Candidates (61a) and (61d) avoid ambimorphemic segments by deleting the correspondents of four SF-segments, each. This is, of course, sanctioned by the correspondence constraint MAX(SF-B, seg). But crucially, these candidates also incur two
violations of top-ranking ALIGN(M⇒P) because, when they lose some of their segmental contents, two of their MWd-edges end up misaligned. Candidates (61a) and (61d) are then the first two forms to be ruled out. Candidates (61b) and (61c) satisfy ALIGN-(M⇒P) as optimally as possible. Incurring one violation of ALIGN(M⇒P) is something impossible to avoid because of the different size of the source forms. The decision falls then onto the lower-ranking constraint MAX(SF-B, seg), which makes it clear that only if the blending occurs at the left margin can ambimorphemicity be exploited in an optimal way to the benefit of (SF-B)-Identity. Candidate (61c), with two MAX(SF-B, seg) violations, achieves the closest identity possible, if blending occurs at the right margin. But candidate (61b) with blending at the left margin, is better than (61c) because it achieves perfect compliance with the constraint MAX(SF-B, seg) at the affordable cost of incurring some violations to bottom-ranking MORPHDIS. Interestingly, ambimorphemicity plays a double role. It allows a better preservation of (SF-B)-Identity, but it also serves to facilitate alignment. Compare, for example, candidates (61a) and (61b). Since the segments /p, e, d, a/ in (61a) do not serve as correspondents for two SF-segments each, the morphological word ːpedagogoxikaː is reduced to ːgoxikaː with the result that its left edge is not aligned with the left edge of the PWd. Candidate (61c), on the other hand, has the ambimorphemic segments /p, e, d, a/, which make possible that the left edge of the MWd ːpedagogoxikaː be aligned with the left edge of the PWd.

The results of this analysis prove that there is nothing arbitrary in the selection of the output form piedragoxika over pedagopiedra or any other candidate GEN could possibly generate from the source forms piedra and pedagoxika. This account explains
in a principled manner why this is the form chosen and not any other one. Blends such as *dedocracia, socialista, analfabestia, inogente*, etc. pattern just like *piedragoxika* because their source forms also exhibit extensive phonemic compatibility.

(62)  \( \text{NO-PWD}^* \gg \text{ALIGN(M} \leftrightarrow \text{P)} \gg \text{MAX(sf-B, seg)} \gg \text{MORPHDIS} \)

| SF: \[
\begin{align*}
&\text{dédor} \quad \text{democracia} \\
&\text{inocente} \quad \text{gente}
\end{align*}
\] | NO-PWD* | ALIGN(M \(\leftrightarrow\) P) | MAX(sf-B) | MORPHDIS |
|---|---|---|---|---|
| a. \[
\begin{align*}
&\text{dédor} \quad \text{democracia} \\
&\text{inocente} \quad \text{gente}
\end{align*}
\] | ! | | | |
| b. \[
\begin{align*}
&\text{dédor} \quad \text{democracia} \\
&\text{inocente} \quad \text{gente}
\end{align*}
\] | ! * | | | |
| c. \[
\begin{align*}
&\text{dédor} \quad \text{mocracia} \\
&\text{inocente} \quad \text{gente}
\end{align*}
\] | ! * | de | | |
| d. \[
\begin{align*}
&\text{dédor} \quad \text{mocracia} \\
&\text{inocente} \quad \text{gente}
\end{align*}
\] | ! * | o d | | |
| e. \[
\begin{align*}
&\text{dédor} \quad \text{cracia} \\
&\text{inocente} \quad \text{gente}
\end{align*}
\] | * | m de o | | |
| f. \[
\begin{align*}
&\text{dédor} \quad \text{cracia} \\
&\text{inocente} \quad \text{gente}
\end{align*}
\] | ! * | demo | | |
| g. \[
\begin{align*}
&\text{dédor} \quad \text{cracia} \\
&\text{inocente} \quad \text{gente}
\end{align*}
\] | ! * | crasia | | |

| SF: \[
\begin{align*}
&\text{dédor} \quad \text{democracia} \\
&\text{inocente} \quad \text{gente}
\end{align*}
\] | NO-PWD* | ALIGN(M \(\leftrightarrow\) P) | MAX(sf-B) | MORPHDIS |
|---|---|---|---|---|
| a. \[
\begin{align*}
&\text{dédor} \quad \text{democracia} \\
&\text{inocente} \quad \text{gente}
\end{align*}
\] | ! | | | |
| b. \[
\begin{align*}
&\text{dédor} \quad \text{democracia} \\
&\text{inocente} \quad \text{gente}
\end{align*}
\] | ! * | | | |
| c. \[
\begin{align*}
&\text{dédor} \quad \text{cracia} \\
&\text{inocente} \quad \text{gente}
\end{align*}
\] | ! * | | | |
| d. \[
\begin{align*}
&\text{dédor} \quad \text{cracia} \\
&\text{inocente} \quad \text{gente}
\end{align*}
\] | ! * | | | |
| e. \[
\begin{align*}
&\text{dédor} \quad \text{cracia} \\
&\text{inocente} \quad \text{gente}
\end{align*}
\] | ! * | | | |

A single constraint ranking accounts for the two blending patterns in (62) without any need to stipulate that for some blends the locus of blending is towards the left margin and for others it is towards the right margin. It is the interaction of the principles at play that determines what the blend should be. Then, an additional advantage of this analysis is that it does not have to stipulate an order for the source forms to be fed into GEN.
Whether they enter GEN in the order *dedo democracia* or *democracia dedo* does not make any difference in the results of the evaluation. The source forms will always combine in the best way possible in order to satisfy the output-to-output correspondence constraints according to the priority they enjoy in the ranking.

### 3.3.5 Morpheme overlapping upon non-identical segments

So far, it has been assumed that only SF-segments that are featurally-identical may share a single B-correspondent. This assumption, however, appears to be too strong when one considers blends in which a B-segment that could be the correspondent for two SF-segments is only slightly different from one of them. Consider the following examples.

\[(63)\]

\[
\begin{array}{ccc}
\text{f u t b o l} & \text{g o l} & \text{‘soccer’} \\
\text{g o l} & \text{‘goal’} \\
\text{f u t g o l} & \text{‘the name of a soccer magazine’} \\
\end{array}
\]

\[
\begin{array}{ccc}
\text{k r u s i g r a m a} & \text{d r a m a} & \text{‘crossword puzzle’} \\
\text{d r a m a} & \text{‘drama’} \\
\text{k r u s i d r a m a} & \text{‘dramatic puzzle’} \\
\end{array}
\]

\[
\begin{array}{ccc}
\text{i n o s e n t e} & \text{x e n t e} & \text{‘innocent’} \\
\text{x e n t e} & \text{‘people’} \\
\text{i n o x e n t e} & \text{‘a nobody’} \\
\end{array}
\]
Like the data in (63), many blends have origin in SF’s that are extensively compatible in terms of the segments they have in common. In fact, they are so compatible that, were it not for a single segment in which the two source forms differ, the result would be a PUN rather than a blend. That is, one of the SF’s would be completely undistinguishable from the other SF in B (e.g. *comercio* 'food business' < *comer* 'eat' + *comercio* 'business'). But even when the two SF’s differ in one segment, certain features of that segment may still be interpreted as a similarity between the two SF’s. For instance, although the pairs /b/ ~ /g/, /g/ ~ /d/ and /s/ ~ /x/ involve segments that are clearly distinct, these segments have several features in common. Actually, the only difference between the members of these pairs is their place of articulation (cf. [labial] ~ [velar] and [velar] ~ [coronal], for the stops; [coronal] ~ [velar] for the fricatives). Evidently, there are more features the members of these pairs have in common than features in which they differ. It is then not unreasonable to think that the correspondent of a segment in SF$_1$ could play a double role and also act as the correspondent of a segment in SF$_2$ that is slightly different. That is to say that for two SF-segments to be able to share a single B-correspondent, they do not necessarily have to be identical. I propose to reanalyze the featural unfaithfulness of a B-segment with respect to its SF-correspondent as IDENT(SF-B) violations rather than MAX(SF-B, seg) violations. McCarthy and Prince (1995) propose IDENT(F) as the constraint that evaluates featural correspondence. IDENT(SF-B) is the specific version of this constraint active in morphological blending.
Let $\alpha$ be a segment in SF and $\beta$ be any correspondent of $\alpha$ in B. If $\alpha$ is $[\gamma F]$, then $\beta$ is $[\gamma F]$. With the incorporation of the constraint IDENT(SF-B), a blend such as futgol does not fall in violation of the constraint MAX(SF-B, seg) at all (see 64b). Instead, the segment /g/ that is contained in B $[\{\{fut\}\{gol\}\}]$ is the correspondent of both the segment /b/ in SF1 futbol and the segment /g/ in SF2 gol. This means that it is only featurally that B is not identical to SF because, in regards to the number of correspondents, B achieves perfect identity to SF. According to this, having a non-identical correspondent is better than not having a correspondent at all. For this purpose, the constraint MAX(SF-B, seg) must dominate the constraint IDENT-(SF-B). Note that with MAX(SF-B, seg) dominating both IDENT(SF-B) and MORPHDIS, B is able to maximize its identity with respect to SF at least in terms of the number of correspondents no matter if some segments in B must act as correspondents for two segments in SF that are not identical in their featural composition. This is illustrated in tableau (65) where I leave out the constraints NO-PWd* and ALIGN(M$\leftrightarrow$P) since they are not relevant for proving this point.

(65) **MAX(SF-B, seg) >> IDENT(SF-B) >> MORPHDIS**

<table>
<thead>
<tr>
<th>SF: $[{{fut}{gol}}]$</th>
<th>MAX(SF-B)</th>
<th>IDENT(SF-B)</th>
<th>MORPHDIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. $[{{fut}{gol}}]$</td>
<td>b !</td>
<td></td>
<td>ol</td>
</tr>
<tr>
<td>b. $[{{fut}{gol}}]$</td>
<td></td>
<td>[place]</td>
<td>gol</td>
</tr>
</tbody>
</table>

Phonetically, (65a) and (65b) are identical forms. However, these candidates are formally different because each instance of the segment /g/ they contain embodies a
different type of correspondence relationship. Whereas in (65a) the segment /g/ is the exclusive correspondent of the segment /g/ in SF2 gol, in (65b) the segment /g/ is in a double-correspondence relationship with the segment /b/ in SF1 and the segment /g/ in SF2. Candidate (65b) wins over (65a) because it finds an affordable way to satisfy MAX(SF-B, seg). By allowing a featurally-non-identical relationship, this candidate is able to provide a correspondent for every single segment in SF. The optimal output form falls in violation of IDENT(SF-B) and MORPHDIS, but these violations are justified because having a correspondent for every SF-segment is more important for (SF-B)-Identity. With the constraint MAX-(SF-B, seg) dominating IDENT-(SF-B), a candidate that offers an unfaithful correspondent for an SF-segment is better than one that has no correspondent at all.

Additionally, IDENT(SF-B) must dominate MORPHDIS. Otherwise, any B-segment could be a correspondent for any SF-segment no matter how dissimilar they are. This would yield the undesirable result of allowing extreme correspondence relations such as the case of a vocalic segment (e.g. /a/) acting as the correspondent of a consonantal segment (e.g. /k/); quite a stretched relation considering that the only feature such segments have in common is segmenthood for they differ in every feature under the root node. Domination of IDENT-(SF-B) over MORPHDIS constraints the degree to which an ambimorphemic B-segment may be featurally-dissimilar with respect to its SF-correspondent(s). The more dissimilar B(x) is from SF(y), the more violations of IDENT(SF-B) will arise. The effect of this is that when evaluating two competing output forms, both of which contain ambimorphemic segments, the winning candidate will be
the one whose ambimorphemic segments are minimally dissimilar from their SF-correspondents. This is illustrated in tableau (66) below. Candidates (66b) and (66c) perform better than (66a) because they achieve perfect satisfaction of the constraint \(\text{MAX}(\text{SF-B, seg})\) at the expense of having ambimorphemic segments. Nonetheless, in the case of (66c), the segments upon which the two source forms overlap are not the ones that facilitate the best preservation of (SF-B)-Identity. The fact that the ambimorphemic segments in (66c) do not have correspondents in SF\(_1\) and SF\(_2\) that are featurally-identical, or at least very similar, gives rise to a great number of \(\text{IDENT}(\text{SF-B})\) violations. The ambimorphemic segments of candidate (66b), on the other hand, are a lot more similar to their correspondents in SF\(_1\) and SF\(_2\). As a result of this, only one \(\text{IDENT}(\text{SF-B})\) violation is necessary: \{g/d\}. Candidate (66b) is the winner because it achieves optimal preservation of (SF-B)-Identity as reflected by the minimal number of \(\text{IDENT}(\text{SF-B})\) violations.

(66) \(\text{MAX}(\text{SF-B, seg}) \gg \text{IDENT}(\text{SF-B}) \gg \text{MORPHDis}\)

<table>
<thead>
<tr>
<th>SF: {&quot;krusigráma} {&quot;dráma}}</th>
<th>MAX(SF-B)</th>
<th>IDENT(SF-B)</th>
<th>MORPHDis</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. {&quot;krusi} {&quot;dráma}}</td>
<td>g!</td>
<td></td>
<td>rama</td>
</tr>
<tr>
<td>b. {&quot;krusi} {&quot;dráma}}</td>
<td></td>
<td>[g/d]</td>
<td>drama</td>
</tr>
<tr>
<td>c. {&quot;dráma} {&quot;gráma}}</td>
<td></td>
<td>[k/d] [u/a] ! [s/m] [i/a]</td>
<td>drama</td>
</tr>
</tbody>
</table>

Some important questions arise from this proposal. If featural-unfaithfulness is tolerated minimally, which of the two source forms should the blend be unfaithful to when it can not be completely faithful to both of them? Furthermore, if a blend and its source forms are required to be faithful, why is it that the blend is not identical to the longer source form given that such move would result in total identity at least with one of
the source forms? In order to answer these questions, I point out at the fact that, in terms of featural identity, a Spanish blend is always more faithful to the shorter source form than to the longer one. This suggests that featural identity between the blend and each one of its source forms is evaluated independently. Based on this observation, I propose to split the constraint IDENT(SF-B) in two: IDENT(SF-B)SF1 and IDENT(SF-B)SF2.

(67) IDENT(SF-B)SF1:  
Featural Identity with SF1  
Let $\alpha$ be a segment in SF1 and $\beta$ be any correspondent of $\alpha$ in B. If $\alpha$ is $[\gamma F]$, then $\beta$ is $[\gamma F]$.

(68) IDENT(SF-B)SF2:  
Featural Identity with SF2  
Let $\alpha$ be a segment in SF2 and $\beta$ be any correspondent of $\alpha$ in B. If $\alpha$ is $[\gamma F]$, then $\beta$ is $[\gamma F]$.

Since B is featurally more faithful to SF2 (the shorter source form) than to SF1 (the longer source form), IDENT(SF-B)SF2 must dominate IDENT(SF-B)SF1. This explains why a blend such as inoxente is featurally more faithful to SF2 xente than to SF1 inosente (69d).

(69) MAX(SF-B, seg) >> IDENT(SF-B)SF2 >> IDENT(SF-B)SF1 >> MORPHDIS

<table>
<thead>
<tr>
<th>SF: [inosénte] [xénte]</th>
<th>MAX(SF-B)</th>
<th>IDENT(SF-B)SF2</th>
<th>IDENT(SF-B)SF1</th>
<th>MORPHD</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [ino{xénte}] {s/x}</td>
<td>s !</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. [ino{sénte}] {x/s}</td>
<td>x !</td>
<td></td>
<td></td>
<td>xente</td>
</tr>
<tr>
<td>c. [ino{sénte}] {s/x}</td>
<td>{s/x} !</td>
<td></td>
<td></td>
<td>sente</td>
</tr>
<tr>
<td>d. [ino{xénte}] {x/s}</td>
<td>{x/s}</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This constraint ranking also accounts for the fact that B may not be identical to the longer source form unless SF2 has all of its segments in common with SF1. Tableau (70) below illustrates this case with the pun comercio $<$ comer + comercio.  

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The proposal that a B-segment may be the correspondent of two non-identical SF-segments is supported by the existence of blends in which satisfaction of the constraint ALIGN(MÙP) depends crucially on the possibility of having this kind of featurally-unfaithful correspondence between SF and B-segments. The reader is reminded that ALIGN(M⇌P) is the morphophonological constraint that requires every MWd-edge to match the corresponding edge of a PWd (see 32 above). Concerning the satisfaction of this constraint, the following data are particularly interesting.

In these examples, the source forms of the blend are aligned at one edge even though the segments sitting at that edge are not identical (e.g. /k/ ≠ /x/ and /x/ ≠ /g/ ). Despite their non-identity, the members of these pairs of segments are not extremely
dissimilar, which would result in only a few IDENT-(SF-B) violations, if one of them is used as the correspondent of both SF-segments.

(72) \[ \text{ALIGN(M} \Leftrightarrow \text{P)} \gg \text{MAX(SF-B, seg)} \gg \text{IDENT(SF-B)} \gg \text{MORPHDIS} \]

<table>
<thead>
<tr>
<th>SF: [{k} \text{komérsio}] [{x} \text{odoxér}]</th>
<th>ALIGN(M(\Leftrightarrow)P)</th>
<th>MAX(SF-B)</th>
<th>IDENT(SF-B)</th>
<th>MORPHDIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [{k} \text{adoxér} {x} \text{komérsio}]</td>
<td>* * !</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. [{k} \text{adoxér} {sio}]</td>
<td>* * !</td>
<td>komer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. [{x} \text{adoxér} {sio}]</td>
<td>* * !</td>
<td>km</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. (\Rightarrow) [{k} \text{adoxér} {sio}]</td>
<td>*</td>
<td></td>
<td></td>
<td>xoder</td>
</tr>
</tbody>
</table>

Indeed, an output form that opts for this alternative is preferred because by having ambimorphemic peripheral segments such form is able to achieve better alignment (see 72d) than an output form that lacks the correspondent of the edgemost segment of one of the SF’s (72c). The latter can not help falling in violation of ALIGN(M\(\Leftrightarrow\)P) since the lack of peripheral correspondents precludes proper alignment. Candidate (72a) violates ALIGN(M\(\Leftrightarrow\)P) twice because the right edge of MWd \(\{x\}\) and the left edge of MWd \(\{k\}\) are not aligned with a PWd-edge. These two violations are fatal despite the fact that (72a) fully complies with all lower-ranking constraints. Candidate (72b) is an attempt to blend the two SF’s without using ambimorphemic segments. This results in loss of segmental material which is sanctioned by MAX(SF-B, seg). But crucially, the loss of peripheral segments in this candidate translates into misalignment since the right edge of the mutilated MWd \(\{sio\}\) and the right edge of MWd \(\{x\}\) do not match a PWd-edge. The most interesting contrast is between candidates (72c) and (72d). By having ambimorphemic segments, including a pair of non-identical correspondents (e.g. \[k/x\],
(72d) is not only able to perfectly comply with MAX(SF-B, seg), but it also manages to align the greatest number of MWd-edges. Note that in (72d) only the right edge of MWd \{xoder\} does not match a PWd-edge. By contrast, candidate (72c) which only allows ambimorphemic segments when the SF-correspondents are featurally-identical (e.g. \[o/o\], \[e/e\], \[r/r\]), falls in violation of ALIGN(M⇌P) twice since not only the right edge of MWd \{xoder\} is misaligned but also the left edge of the mutilated MWd \{o ersio\}. These results support the proposal that a B-segment may in fact have a featurally-dissimilar SF-correspondent.

When the source forms of a blend are phonologically less compatible because SF₁ has fewer segments in common with SF₂, a greater number of violations of the constraints that promote (SF-B)-Identity is necessary.

(73) a.  
\[
\begin{align*}
\text{bocadillo} & \quad 'snack' \\
\text{peerro} & \quad 'hot dog'
\end{align*}
\]
\[
\text{bocaperro} \quad 'hot dog snack'
\]

b.  
\[
\begin{align*}
\text{bicicleta} & \quad 'bicycle'
\end{align*}
\]
\[
\text{burro} \quad 'donkey'
\]
\[
\text{burricleta} \quad 'small bicycle'
\]

c.  
\[
\begin{align*}
\text{bocabulario} & \quad 'vocabulary'
\end{align*}
\]
\[
\text{jeta} \quad 'mouth of an animal'
\]
\[
\text{jetabulario} \quad 'bad speech characterized by the use of cuss words' 
\]


Clearly, (SF-B)-Identity is more critically at stake in these examples because the members of each pair of SF’s have only one segment in common. In order to comply with ALIGN(M⇌P) and MAX(SF-B, seg), several B-segments need act as correspondents of two non-identical SF-segments. The more instances of this type of unfaithful correspondence, the more IDENT(SF-B) violations are necessary.

(74) \[ \text{ALIGN(M⇌P) >> MAX(SF-B, seg) >> IDENT(SF-B) >> MORPHDIS} \]

<table>
<thead>
<tr>
<th>SF: {bocadillo} {pérro}</th>
<th>ALIGN(M⇌P)</th>
<th>MAX(SF-B)</th>
<th>IDENT(SF-B)</th>
<th>MORPHDIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. {boca} {pérro}</td>
<td>* *!</td>
<td>dillo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. {boca} {pérro}</td>
<td>*</td>
<td>d ! ill</td>
<td></td>
<td>o</td>
</tr>
<tr>
<td>c. {boca} {pérro}</td>
<td>*</td>
<td>([d/,p,][e/,] [r,/,ll])</td>
<td>perro</td>
<td></td>
</tr>
</tbody>
</table>

Although the three candidates in tableau (74) are phonetically identical they are formally different. (74a) is a candidate resulting from clipping. That is, the source forms have been shortened and their remains have been put together, which means that there is no overlapping and hence input and output segments are in a one-to-one correspondence relation. This candidate is ruled out by ALIGN(M⇌P) because it contains two misaligned MWd-edges. (74b) is a blend with partial overlapping involving only segments that are featurally-identical in both SF’s: the segment /o/. Lastly, (74c) is a blend with total overlapping including non-identical segments. This is the optimal output form because it maximizes the alignment of MWd-edges plus it provides a correspondent for every single segment in the SF’s. Satisfaction of these higher-ranking principles is achieved at the cost of violating IDENT(SF-B) since three out of the four ambimorphemic segments this candidate contains do not have identical correspondents in one of the SF’s.
Given that the source forms of the blends in (73) have so few segments in common, it might appear that there is actually no overlapping and that the source forms have simply been clipped and sewed together. But this is only impressionistic. While it is true that from a segmental viewpoint, these blends only have one segment upon which the two source forms clearly converge, it should also be observed that the number of syllables given up by the longer SF is exactly equivalent to the number of syllables the shorter SF has. For instance, if SF₁ has five syllables and SF₂ has two syllables, B will maintain three syllables from SF₁ and two syllables from SF₂ with the additional condition that the two syllables from SF₂ must sit at one of the peripheries of B. This suggests that, at a prosodic level, one of the source forms does indeed overlap upon the other one.

(75) Prosodic Overlapping:

<table>
<thead>
<tr>
<th></th>
<th>Left Alignment</th>
<th>Right Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF₁</td>
<td>σ₁ σ₂ σ₃ σ₄ σ₅</td>
<td>σ₁ σ₂ σ₃ σ₄ σ₅</td>
</tr>
<tr>
<td>SF₂</td>
<td>σ₁ σ₂</td>
<td>σ₁ σ₂</td>
</tr>
<tr>
<td>B</td>
<td>σ₁ σ₂ σ₃ σ₄ σ₅</td>
<td>σ₁ σ₂ σ₃ σ₄ σ₅</td>
</tr>
</tbody>
</table>

It should then be taken into account that morpheme overlapping does not only take place at the segmental level but also supra-segmentally. The realization of this fact is of major importance to account for the length of the blend. Note that if one assumed that the blends in (73) arise from clipping rather than overlapping, then there would be no criterion to determine how much of the longer SF should be clipped since there would be no reason why clipping should stop at a specific point. For instance, in the blending of SF₁ bocadillo and SF₂ perro, SF₁ could be clipped as little as one syllable: bocadiperro, or as much as four: boperro, since no edge of SF₁ is required to match the corresponding
edge of SF₂. By contrast, if one assumes overlapping, it follows that the longer SF will
give up exactly the number of syllables that the shorter SF has. Recall that the reason
why overlapping needs take place is because MWd-edges must share PWd-edges in order
to achieve optimal alignment. This causes SF₁ and SF₂ to start or end at the same point.
The constraint ALIGN(M ⇔ P), the same principle that forces overlapping, says that no
syllable from the SF's should be clipped. Rather, B must contain as many ambimorphemic
syllables as the shorter SF has since both SF's need be represented in B for proper
alignment to occur. My claim is that when the source forms of a blend lack phonological
affinity, overlapping still takes place. This is evident at the syllable-node level where the
syllables of the shorter SF overlap on the syllables of the longer one even in the cases
where this entails, that at the segmental level, a great number of IDENT(SF-B) violations
will arise as illustrated in tableau (74) above.

3.3.6 A continuous segmental string

Except for a non-final word marker, B always has a correspondent for every
segment in the shorter SF. In deed, in terms of segmental units, there is a tendency for B
to remain more strictly faithful to the shorter SF than to the longer one. This becomes
evident when the overlapping syllables contain a different number of segments.

(76) SF₁  p e d a g o g i c a  a n a l f a b e t a
SF₂  p i e d r a  b e s t i a
B  p i e d r a g o g i c a  a n a l f a b e s t i a

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In these examples, the overlapping syllables in $SF_1$ and $SF_2$ contain four and six segments, respectively. Even though the contiguity among the segments in $SF_1$ is altered, $B$ does not skip any internal segments in $SF_2$ (e.g. forms such as *pidragogica, *piedagogica are not possible). McCarthy and Prince (1995) propose to analyze the correspondence relationship between internal segments through the constraint CONTIGUITY. The specific versions of this constraint that are at large in morphological blending are defined below after their original definition by McCarthy and Prince.

(77) $I(SF_2)$CONTIGUITY: 'No skipping in $SF_2$'

The portion of $SF_2$ standing in correspondence forms a contiguous string. Range ($\mathcal{R}$) is a single contiguous string in $SF_2$.

(78) $O(SF_1)$CONTIGUITY: 'No intrusion in $SF_1$'

The portion of $SF_1$ standing in correspondence forms a contiguous string. Range ($\mathcal{R}$) is a single contiguous string in $SF_2$.

Clearly, $I(SF_2)$CONTIGUITY must outrank $O(SF_1)$CONTIGUITY given that it is preferred not to skip any internal segments in $SF_2$ no matter if for that purpose some the correspondents of $SF_1$ segments are broken apart.

(79) $I(SF_2)$CONTIGUITY $>>$ $O(SF_1)$CONTIGUITY

<table>
<thead>
<tr>
<th>SF:</th>
<th>$a{\underline{\text{analfabéta}}} [\underline{\text{béstia}}] $</th>
<th>$I(SF_2)$CONTIGUITY</th>
<th>$O(SF_1)$CONTIGUITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. $\varnothing [\underline{\text{analfabéta}} [\underline{\text{béstia}}] ]$</td>
<td>s i</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. $[\underline{\text{analfabéta}} [\underline{\text{béstia}}] ]$</td>
<td>s !</td>
<td>i</td>
<td></td>
</tr>
<tr>
<td>c. $[\underline{\text{analfabéta}} [\underline{\text{béstia}}] ]$</td>
<td>i !</td>
<td>s</td>
<td></td>
</tr>
<tr>
<td>d. $[\underline{\text{analfabéta}} [\underline{\text{béstia}}] ]$</td>
<td>s ! i</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Candidates (79b) through (79d) are ruled out by I(SF2)CONTIGUITY because they lack the correspondent(s) for some internal segment(s) in SF2 bestia. The winner is candidate (79a) because it does not delete any internal segments in SF2 even if this occurs to the detriment of O(SF1)CONTIGUITY.

3.4 Summary

In this chapter, I explored the process of Spanish word-blending from a morphophonological perspective. I argued that blends are a type of compound whose optimal output form is determined by the interaction of both morphological and phonological constraints. In morphological blending, dominance of the prosodic constraint NO-PWd* over the interface constraint ALIGN(M ⇒ P) yields non-concatenative morphology: morpheme overlapping. The dominated constraint ALIGN(M ⇒ P) is satisfied optimally when the source forms start or end at the same point so that a greater number of MWd-edges can be aligned with PWd-edges. This causes one of the source forms to overlap upon one of the peripheries of the other source form. As a result, a single segment in the blend may stand in correspondence with two segments in the source forms. This strategy is used to avoid violations of the correspondence constraint MAX(SF-B, seg) at the expense of violating MORPHDIS. It is preferable if an ambimorphemic segment in B is featurally-identical to its two correspondents in SF because, in that way, no violations of IDENT(SF-B) would arise. However, when that is not the case, providing a non-identical correspondent is still better than not providing a correspondent at all, even though this results in IDENT(SF-B) violations. Such violations are justified by the need to comply
with ALIGN(M ⇔ P), whose satisfaction would be precluded if B did not provide the correspondents for non-identical peripheral SF-segments. Whenever the word-marker of the shorter source form is trapped in the middle of the blend, this segment is lost due to the action of the undominated morpho-phonological constraint ALIGN-WM. Respecting the contiguity relations of the segments in the shorter source form takes priority over respecting the contiguity of the segments in the longer source form. In terms of featural identity, the blend also remains more faithful to the shorter source form than to the longer one. In compliance with the constraint I(SF2)CONTIGUITY, no internal segments in the shorter source form may be skipped. Domination of IDENT(SF-B)SF2 over IDENT(SF-B)SF1 explains why when the two source forms differ in some segment(s), the ambimorphemic segments in the blend are more faithful to their correspondents in the shorter source form than to those in the longer one. Morphological blending is a type of output-to-output derivation where the blend is required to remain closely faithful to its source forms. Even though perfect identity between the blend and its source forms may not always be achieved, the output-to-output correspondence relationship that holds between them forces the preservation of derived properties of the source form such as prosodic structure and morpho-phonemic changes (e.g. diphthongization). Faithfulness to such derived properties can only make sense if blends are derived from output forms. The following constraint hierarchy accounts for the above-mentioned qualities of Spanish word-blending.
Constraint Ranking Responsible for Morphological Blending:

- **DEP**(SF-B, $\sigma$)
- **DEP**(SF-B, seg)
- No-PWd*
- I(SF$_2$)CONTIGUITY
- O(SF$_1$)CONTIGUITY
- ALIGN(M$\Leftrightarrow$P)
- ALIGN-WM
- MAX(SF-B, $\sigma$)
- MAX(SF-B, seg)
- IDENT(SF-B)
- MORPHDIS
CHAPTER 4

WORD MINIMIZATION
IN CLIPPINGS AND HYPOCORISTICS

4.0 Introduction

Spanish clippings (e.g. profesór > prófe 'teacher', mučača > čača 'girl') and hypocoristics (e.g. terésa > tére 'Theresa', albéto > béto 'Albert') are instances of truncatory morphology. A source form is shortened in order to conform with an invariant template: a single syllabic trochee (Prieto 1992a, Lipski 1995, Colina 1996).

(1) Prosodic Structure of Spanish Truncated Forms:

In line with the proposals by McCarthy and Prince (1994) and Benua (1995), I argue that Spanish truncated forms are unmarked prosodic words that arise when the family of MAX(imization)-correspondence constraints is dominated by the set of Prosodic Word Restrictor constraints: FT-BIN, PARSE-SYLL and ALIGN-FT. Following Selkirk
(1986), Chen (1987), Prince and Smolensky (1993) and McCarthy and Prince (1993b), I assume that every morphological word must be prosodically-licensed through its affiliation with a prosodic word. When the Prosodic-Word Restrictor constraints dominate MAX, the prosodic word must be minimal. It may contain no more than a single binary foot. As a consequence of this, the morphological word must also undergo minimization. Only those segments of the source form that may be parsed under the minimal prosodic word may be preserved in the output.

I propose a clear distinction between two basic types of truncated forms that exist in Spanish. Type-A comprises those truncated forms that preserve most of the segments parsed under the two initial syllables of the source form (e.g. bernárðo > bérna 'Bernard', kapitán > kápi 'captain'). Type-B consists of forms that preserve most of the segments parsed under the main-stressed foot of the source form (e.g. ernésto > néto 'Ernest', bendít̩o > dito 'blessed'). In this chapter, I propose to account for the shortening that occurs in both types of truncation through the partial ranking FT-BIN, PARSE-SYLL, ALIGN-Ft >> MAX. However, two different constraint rankings are necessary because whereas Type-B Truncated Forms are sensitive to the foot structure of the source form, this is an irrelevant factor in the derivation of Type-A Truncated Forms. My proposal includes the constraint HEAD(PWd)MAX, which requires that every element in the head of the PWd of the source form must have a correspondent in the truncated form. Whereas this is a high-ranking constraint in Type-B Truncated forms, it is inactive in the formation of Type-A Truncated Forms.
This chapter is divided in two main sections. Section 4.1 reviews two previous works on Spanish truncatory morphology. They are Prieto (1992a) and Lipski (1995). Section 4.2 presents a new constraint-based analysis of Type-A Truncated Forms that solves some serious problems in the proposal made by Colina (1996). The new account is extended to explain Type-B Truncated Forms, which are found to be prosodic-head bound. The two types of truncated forms also differ with respect to syllabic well-formedness constraints which are more strictly enforced in Type-B Truncated Forms.

4.1 Spanish truncatory morphology

Prior to the emergence of Autosegmental Phonology, Spanish hypocoristics received the attention of several scholars. Wijk (1964) and Urawa (1985) report data belonging to the Honduran and Colombian dialects. Boyd-Bowman (1955) approaches hypocoristics from the perspective of child language acquisition and Costenla Umaña (1982) offers an analysis within the framework of Linear Phonology. With the advent of Prosodic Morphology Theory, hypocoristics have been analyzed from a prosodic perspective by Prieto (1992a) and Lipski (1995). These modern accounts rely on derivational procedures such as Prosodic Circumscription and Template Mapping. Colina (1996) reanalyzes the data reported by Prieto (1992) within a constraint-based model, but her account leaves out a substantial number of facts reported by Lipski (1995). In this section, I review the proposals made by Prieto (1992a) and Lipski (1995). These works synthesize the work done on Spanish truncation processes.
4.1.1 A syllabic trochee

Prieto's (1992a) Prosodic-Morphology account is particularly valuable for having uncovered the prosodic structure of Spanish clippings and hypocoristics. Her study focuses on Type-A Truncated Forms (TF), which correspond to a syllabic trochee formed with segments from the first two syllables of the Source Form (SF). This type of truncation is typical of Peninsular Spanish. The examples below are representative.

(2) Spanish Hypocoristics: Type A

<table>
<thead>
<tr>
<th>Syllable Type</th>
<th>SF</th>
<th>TF</th>
<th>Source Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>LL</td>
<td>e.δu.ár.δo</td>
<td>é.δu</td>
<td>Eduardo</td>
</tr>
<tr>
<td></td>
<td>a.li.θja</td>
<td>á.li</td>
<td>Alicia</td>
</tr>
<tr>
<td>HL</td>
<td>mar.γa.ρί.ta</td>
<td>már.γa</td>
<td>Margarita</td>
</tr>
<tr>
<td></td>
<td>en.ρí.ke</td>
<td>én.ρí</td>
<td>Enrique</td>
</tr>
</tbody>
</table>

The data in (2) show that, when the penitial syllable of SF is light, all segments from the first two SF-syllables are preserved in TF. This pattern contrasts with the data in (3) below, where the peninitial syllable of SF is heavy. In such case, there is optional variation. Some speakers leave out the coda segment of the second syllable, whereas others copy the entire first two SF-syllables.

(3) Spanish Hypocoristics: Type A

<table>
<thead>
<tr>
<th>Syllable Type</th>
<th>SF</th>
<th>TF</th>
<th>Source Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH</td>
<td>Xe.súś</td>
<td>Xé.su</td>
<td>Jesus</td>
</tr>
<tr>
<td></td>
<td>mi.γél</td>
<td>mi.γé</td>
<td>Miguel</td>
</tr>
<tr>
<td>HH</td>
<td>ar.mán.do</td>
<td>ár.ma</td>
<td>Armando</td>
</tr>
<tr>
<td></td>
<td>ber.nár.δo</td>
<td>bér.na</td>
<td>Bernardo</td>
</tr>
</tbody>
</table>
However, when the peninitial syllable of SF contains a diphthong (4), all speakers copy only as far as the first vocalic segment of the second syllable.

(4) LH  
  da.nlél  dá.nlí  Daniel
  á.nlí  á.nlí  Adrian
  má.nlél  má.nlí  Manuel
  gá.nlí  gá.nlí  Gabriel

Prieto’s analysis of these data relies on Prosodic Circumscription. A parsing function $\Phi$ delimits the prosodic constituent $C$ within the base $B$ at one of its edges $E$: $\Phi(B, C, E)$ (McCarthy and Prince 1990, 1993a, 1995). This function yields the division of $B$ in two parts, the kernel $B:\Phi$, which corresponds to $C$, and the residue $B/\Phi$. That is to say that $B = B:\Phi \ast B/\Phi$, where the symbol $\ast$ indicates concatenation. Prosodic Circumscription serves to delimit the domain of certain morphological processes that do not apply to the entire $B$ but only to a part of it. In observance of the Prosodic Morphology Hypothesis, this procedure is restricted to function in terms of the units of prosody: mora, syllable, foot, prosodic word.

In positive Prosodic Circumscription, the kernel $B:\Phi$ is used as the base for a morphological operation $O$. This is formalized as $O/\Phi (B) = O(B:\Phi) \ast B/\Phi$. In negative Prosodic Circumscription, it is the residue $B/\Phi$ that serves as base. That is, $O/\Phi (B) = B:\Phi \ast O(B/\Phi)$. Prieto uses positive prosodic circumscription to derive clippings and hypocoristics. The function $\Phi$ is set to delimit the two leftmost syllables of the word. $\Phi$ is defined as $\Phi(\text{Word}, \sigma\sigma, \text{Left})$. To illustrate, consider the derivation of the hypocoristic [bér.nár] from SF [ber.(nár.dô)] 'Bernard'.

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(5) **Prosodic Circumscription:**

Parsing Function: \( \Phi(\text{Word}, \sigma\sigma, \text{Left}) \)

Base: \([\text{ber.}(\text{nár.}\delta o)]\)

\[ B: \Phi = \langle \text{ber.nar} \rangle \]
\[ B/\Phi = \langle \delta o \rangle \]

\((B = B:\Phi \ast B/\Phi) = (B = \langle \text{ber.nar} \rangle \ast \langle \delta o \rangle)\)

The two syllables of the kernel are then mapped from left to right onto a disyllabic foot whose head is the leftmost syllable.

(6) **Template Mapping:**

\[
\begin{bmatrix}
\sigma & \sigma \\
\end{bmatrix}
\begin{bmatrix}
\sigma & \sigma \\
\end{bmatrix}
\]

\[
\leftarrow \quad \begin{bmatrix}
\sigma & \sigma \\
\end{bmatrix}
\begin{bmatrix}
\sigma & \sigma \\
\end{bmatrix}
\]

\[ B: \Phi = \text{ber.nar} \rightarrow \text{bér nar} \]

An additional condition requiring that the second syllable of the template be light applies optionally to those forms whose peninitial syllable is closed but does not contain a diphthong (7b). The same condition applies obligatorily to those forms that contain a diphthong in their peninitial syllable (7c).

(7)  

a. **Additional Condition:**

The second syllable has to be light.

b. **Optional Application:**

\[
\begin{bmatrix}
\sigma & \sigma \\
\end{bmatrix}
\begin{bmatrix}
\sigma & \sigma \\
\end{bmatrix}
\rightarrow
\begin{bmatrix}
\sigma & \sigma \\
\end{bmatrix}
\begin{bmatrix}
\sigma & \sigma \\
\end{bmatrix}
\begin{bmatrix}
\sigma & \sigma \\
\end{bmatrix}
\]

\[ B: \Phi = \text{ber.nar} \rightarrow \text{bér nar} \sim \text{bér na} \]

c. **Obligatory Application:**

\[
\begin{bmatrix}
\sigma & \sigma \\
\end{bmatrix}
\rightarrow
\begin{bmatrix}
\sigma & \sigma \\
\end{bmatrix}
\begin{bmatrix}
\sigma & \sigma \\
\end{bmatrix}
\]

\[ B: \Phi = \text{da.njél} \rightarrow \text{dán i} \]
This account is successful in deriving the correct output forms. However, it is not flawless. It violates an essential tenet of Prosodic Morphology Theory. The kernel of Prosodic Circumscription is required to be a prosodic constituent (McCarthy and Prince, 1993a). It must be noted that the foot is the only prosodic constituent that can group the two syllables needed to fill the template. Nevertheless, in (6) and (7) above, the first two syllables of the source forms [ber.nár.δo] and [da.njél] do not constitute a prosodic unit because they are not parsed under a single foot. This is illustrated in (8) below.

![Diagram with PWd and F symbols, representing prosodic units](image)

The feet (nár.δo) and (njél) are the true prosodic units, at a level higher than the syllable, that exist in these SF's. However, if these constituents were to be respected, this analysis would be unable to derive the correct forms. Prieto's account relies on a type of Prosodic Circumscription that mutilates prosodic units. Note that in her analysis the only

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1 The reader is reminded that stress in Spanish is limited to a right-edge three-syllable window which indicates that the right edge of the main-stressed foot must match the right edge of the prosodic word, except for Type-B words which are subject to NONFINALITY (e.g. [(pá.ja).ro] 'bird'). Furthermore, primary-stress is quantity-sensitive, which allows a heavy syllable to form a binary foot. According to this, it is the leftmost element within the foot that must be prominent. This means that Spanish feet are not iambic but trochaic. Consequently, the parsing of the source forms [ber.nár.δo] and [da.njél] could not be [(ber.nár).δo] and [(da.njél)] but [ber.(nár.δo)] and [da.(njél)], respectively.
foot that exist in SF [ber.(nár.δo)] is pruned when the two leftmost syllables are removed. Accepting this kind of Prosodic Circumscription would undermine the very basis of the theory of Prosodic Morphology. Any kind of operation would be possible if the theory is not constrained to allow only processes that function in terms of constituents.

4.1.2 Successive applications of prosodic circumscription

Lipski (1995) analyzes another type of Spanish hypocoristics. Type-B Truncated Forms are also molded according to a template that corresponds to a syllabic trochee. But unlike Type-A, it is the final syllables of SF that tend to be preserved in TF (e.g. [(bé.to)] < [al.(βér.to)] 'Albert'). Additionally, both syllables must be of the CV-type. The only exception to this is the possibility of parsing a nasal as the coda of the first syllable of the trochee (e.g. [(mín.da)] < [ar.(mín.da)] 'Arminda'). All other coda segments in an SF-syllable are lost. Onset clusters are simplified by deleting the second element of the cluster (e.g. [(cán.do)] < [li.(sán.dro)] 'Lisandro') and some phonological substitutions occur (e.g. /s/, /sj/ > [c], /rj/ > [y]), [r] > [l]. This type of truncation is typical of Latin American dialects. The following examples are representative.

<table>
<thead>
<tr>
<th>SF</th>
<th>TF</th>
<th>(Lipski 1995: 391)</th>
</tr>
</thead>
<tbody>
<tr>
<td>al.βér.to</td>
<td>bé.to</td>
<td>Alberto</td>
</tr>
<tr>
<td>gon.sá.lo</td>
<td>čá.lo</td>
<td>Gonzalo</td>
</tr>
<tr>
<td>li.sán.dro</td>
<td>čán.do</td>
<td>Lisandro</td>
</tr>
<tr>
<td>ar.mín.da</td>
<td>mí.ν.da</td>
<td>Arminda</td>
</tr>
<tr>
<td>gra.sjé.la</td>
<td>čé.la</td>
<td>Graciela</td>
</tr>
<tr>
<td>gre.gó.rjо</td>
<td>gó.jo</td>
<td>Gregorio</td>
</tr>
</tbody>
</table>
To account for these data, Lipski allows Prosodic Circumscription and Template Mapping to apply twice each. First, the parsing function \( \Phi \) is set to delimit the rightmost foot of the word. That is, \( \Phi(\text{Word, Foot, Right}) \). Consider the derivation of [\( \text{(bé.to)} \)].

(10) **Prosodic Circumscription:**

Parsing Function: \( \Phi(\text{Word, Foot, Right}) \)  
Base: \( [\text{al.(bé.r.to)}] \)

\[
\begin{align*}
\text{B/}\Phi &= <\text{al}> \\
\text{B:}\Phi &= <\text{bé.r.to}> \\
&(\text{B} = \text{B/}\Phi \ast \text{B:}\Phi) = (\text{B} = <\text{al}> \ast <\text{bé.r.to}>)
\end{align*}
\]

When the function \( \Phi \) applies, it divides \( \text{B} \) into the kernel \( \text{B:}\Phi = <\text{bé.r.to}> \) and the residue \( \text{B/}\Phi = <\text{al}>. \) A morphological operation called \( \text{DEL} \) (letion) is then used to dispose of the residue. \( \text{DEL} \) is formalized as in (11) below.

(11) **Residue Deletion:**

\[
\text{DEL/}\Phi(\text{B}) = \text{DEL}(\text{B/}\Phi) \ast \text{B:}\Phi
\]

Then,

\[
\text{DEL/}\Phi([\text{al.(bé.r.to)}]) = \emptyset \ast <\text{bé.r.to}>
\]

Once the residue is deleted, the remaining foot is submitted to a second application of Prosodic Circumscription. This time, the parsing function is defined as \( \Phi(\text{Foot, Syllable, Left}) \). The syllable sitting at the left edge of the extracted foot is circumscribed as a new kernel.

(12) **Prosodic Circumscription:**

Parsing Function: \( \Phi(\text{Foot, Syllable, Left}) \)  
Base: \( (\text{bé.r.to}) \)  
\( \text{B:}\Phi = <\text{bé.r}> \)
\[ B/\Phi = \langle \text{to} \rangle \]

\[ (B = B:\Phi * B/\Phi) = (B = \langle \beta\text{r} \rangle * \langle \text{to} \rangle) \]

When \( \Phi \) applies to \( \langle \beta\text{r}.\text{to} \rangle \), it separates the kernel \( B:\Phi = \langle \beta\text{r} \rangle \) from the residue \( B/\Phi = \langle \text{to} \rangle \). In Lipski's analysis, this second application of Prosodic Circumscription is necessary because mapping must take place syllable by syllable. Only so may he avoid that coda segments get mapped onto the template. Also, note that after this second application of Prosodic Circumscription, the morphological operation DEL must not apply to the residue because both syllables are necessary to satisfy the template. A syllabic trochee whose syllable nodes are pre-specified to dominate a single mora and a single prenuclear segment forms the template.

(13) **Hypocoristic Template:** (Lipski 1995: 405)

```
  F
 /\  \
/  \ /  \\
\ / \ \ /  \\
/ /  / /  \\
\mu \mu
```

A mapping function \( M \) maps the kernel \( B:\Phi = \langle \beta\text{r} \rangle \) onto the first syllable of the trochee in a template-driven edge-inward fashion. This means that the two positions dominated by the first syllable node of the template must be filled in with the leftmost consonant and the rightmost vocoid of the kernel melody (14a). All other kernel segments must remain unassociated because there is no room for them under the first
syllable node of the template. Unassociated elements are cleared up by Stray Erasure before reaching the surface level.

(14) Template Mapping:

a. F b. F

σ σ

µ µ

β e r

β e t o

(14b) illustrates how a second application of M maps the residue B/Φ = <to> onto the second syllable of the trochee to fully satisfy the template. Only when the penultimate syllable of SF is closed by a nasal (e.g. [li.sán.dro]) is it possible to preserve a coda segment. It is argued that the reason for this is because nasal consonants are the only segments that may be licensed by a following syllable node. Consider the eight steps necessary to derive TF [(≠án.do)] from SF [(li.(sán.dro)].

(15) a. First application of Prosodic Circumscription:

Parsing Function: Φ(Word, Foot, Right)
Base: [li.(sán.dro)]
(B = B/Φ * B:Φ) = (B = <li> * <sán.dro>)

b. Residue Deletion:

DEL/Φ([li.(sán.dro)]) = ∅ * <sán.dro>

c. Second application of Prosodic Circumscription:

Parsing Function: Φ(Foot, Syllable, Left)
Base: (sán.dro)
(B = B:Φ * B/Φ) = (B = <sán> * <dro>)
d. **First application of Template Mapping:**

![Diagram](image)

f. **Coda Adjunction:**

![Diagram](image)

h. **Low-level phonetic rule:**

\[/s/ \rightarrow [\text{č}] \quad \text{sando} \rightarrow \text{čándo}\]

On the second application of Template Mapping (15e), the nasal consonant is parsed as the onset of the second syllable. It is crucial that Stray Erasure does not apply right after the first mapping. Otherwise, the nasal segment would be lost. Through the template-specific rule of Coda Adjunction, the nasal is transferred from the onset of the second syllable to the coda of the first syllable (15f).
It is argued that the double applications of Template Mapping are justified by the fact that this permits a unified account of hypocoristics that arise from penultimately-stressed SF's and those arising from SF's that bear ante-penultimate stress.

(16) Hypocoristics from ante-penultimately-stressed SF's:

<table>
<thead>
<tr>
<th>SF</th>
<th>TF</th>
</tr>
</thead>
<tbody>
<tr>
<td>kán.di.δa</td>
<td>kán.da</td>
</tr>
<tr>
<td>kri.sós.to.mo</td>
<td>čó.to</td>
</tr>
<tr>
<td>es.ko.lás.ti.ko</td>
<td>lá.čo</td>
</tr>
<tr>
<td>trán.si.to</td>
<td>táčo ~ tán.čo</td>
</tr>
<tr>
<td>a.ris.tó.βu.lo</td>
<td>tó.βo</td>
</tr>
<tr>
<td></td>
<td>Cándida</td>
</tr>
<tr>
<td></td>
<td>Crisóstomo</td>
</tr>
<tr>
<td></td>
<td>Escolástico</td>
</tr>
<tr>
<td></td>
<td>Tránsito</td>
</tr>
<tr>
<td></td>
<td>Aristóbulo</td>
</tr>
</tbody>
</table>

The examples in (16) show that, when SF is antepenultimately-stressed, TF preserves segments from the three rightmost SF-syllables (e.g. [(tó.βo)] < a.ris.tó.βu.lo). Under this approach, the correct forms may be derived only if Prosodic Circumscription and edge-inward Template Mapping are allowed to apply twice each (17).

(17) a. First application of Prosodic Circumscription:

| Parsing Function: | Φ(Word, Foot, Right) |
| Base:             | [a.ris.(tó.βu).lo]   |

(B = B/Φ * B:Φ) = (B = <a.ris> * <(tó.βu).lo>)

b. Residue Deletion:

DEL/Φ([a.ris.(tó.βu).lo]) = Ø * <(tó.βu).lo>

c. Second application of Prosodic Circumscription:

| Parsing Function: | Φ(Foot, Syllable, Left) |
| Base:             | <(tó.βu).lo>           |

(B = B:Φ * B/Φ) = (B = <tó> * <βu.lo>)
d. First application of Template Mapping:

```
F
 /\  
/   \ 
σ   σ
 |   |
μ   μ
```

t ó e

e. Second application of Template Mapping:

```
F
 /\  
/   \ 
σ   σ
 |   |
μ   μ
```

t ó β u l o

f. Stray Erasure:

```
F
 /\  
/   \ 
σ   σ
 |   |
μ   μ
```

t ó β o

The first application of Prosodic Circumscription extracts the three rightmost syllables of SF, which are the ones that contain the segments to be preserved in TF (17a). The second application of Prosodic Circumscription, extracts the leftmost of these three syllables (17c). On its first application, the function M maps the melody of the circumscribed syllable onto the first syllable of the template (17d). Since the two remaining syllables contain more segments than the number of segments needed to fill the remaining part of the template, it is crucial that the second application of M be edge-inward. This way, the edgemost segments of the melody take precedence over internal
segments to yield the correct form (17c). By decomposing Prosodic Circumscription and Template Mapping, this approach is able to account for the different patterns exhibited by the data in (9) and (16). Additionally, this account may be extended to cover the following set of data.

(18) **Type-B Hypocoristics:**  

<table>
<thead>
<tr>
<th>SF</th>
<th>TF</th>
<th>(Lipski, 1995: 393)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ful.xén.sjo</td>
<td>fén.čo</td>
<td>Fulgencio</td>
</tr>
<tr>
<td>fe.đe.ri.ko</td>
<td>fi.ko</td>
<td>Federico</td>
</tr>
<tr>
<td>flo.rín.da</td>
<td>fin.da</td>
<td>Florinda</td>
</tr>
<tr>
<td>xe.rár.đo</td>
<td>xá.đo</td>
<td>Gerardo</td>
</tr>
<tr>
<td>ma.ru.na</td>
<td>mi.na</td>
<td>Marina</td>
</tr>
<tr>
<td>san.tjá.yo</td>
<td>sá.yo</td>
<td>Santiago</td>
</tr>
</tbody>
</table>

In these examples, TF is formed from the last two syllables of SF except that the first consonant of the penultimate syllable is replaced by the first consonant of the word.

To accommodate these data, Lipski allows four different applications of Prosodic Circumscription in a single derivation. The first and second applications extract a foot and a syllable as illustrated for the examples above. On its third application, Prosodic Circumscription extracts the initial consonant of the word: Φ(Word, Consonant, Left).

On its fourth application, it separates the first consonant of the hypocoristic: Φ(Hypocoristic, Consonant, Left). The first consonant of the word is then taken by an operator O to overwrite the first consonant of the hypocoristic. Lipski (1995) also considers a type of truncated forms which have been referred to as 'reduplicative' hypocoristics.
His account of these data also relies on circumscription of the initial consonant of the hypocoristic. Once this consonant has been circumscribed, it is deleted by the function DEL. Due to a Template Satisfaction condition, the remaining consonant spreads to fill the empty onset.

This approach appears to achieve ample generality. It accounts for the different sets of data by using the same basic procedures. Regardless the type of SF, TF always corresponds to a syllabic trochee that is derived through successive applications of Prosodic Circumscription and edge-inward Template Mapping. Nevertheless, the analysis has several shortcomings. If the Hypocoristic Template (13) may be altered by adding an extra association line to incorporate a nasal consonant, it remains merely stipulatory that other association lines may not be added to parse non-nasal segments. There is no evidence that a nasal consonant that is parsed as an onset is later on transferred to a preceding coda. Such proposal is ingenious and serves the purpose of creating a temporary shelter for a nasal segment that is necessary to generate the correct form. However, it has no phonological reality. Additionally, this account resorts to a type of Prosodic Circumscription that does not respect prosodic constituency at all times. When SF is penultimately-stressed, the first and second applications of Prosodic Circumscription extract a foot and a syllable, respectively. Since these are prosodic...
constituents, Prosodic Morphology Theory is observed (see 15 above). A different situation arises when the source form of the hypocoristic is antepenultimately-stressed. Recall that antepenultimate stress in Spanish results from compliance with NONFINALITY, which causes the main-stressed foot to shift back one syllable: \[ \ldots (\sigma)_{\sigma}^{P,W_d}. \] In (17) above, the first application of Prosodic Circumscription extracts the three rightmost syllables of the source form. Nevertheless, these syllables do not form a prosodic constituent. The prosodic structure of \textit{SF Aristóbulo} is [a.ris.(tó.βu).lo]. According to this, if a prosodic constituent is to be extracted, then it must be the foot (tó.βu) and not the sequence <(tó.βu).lo> because the latter is not a prosodic unit. Like Prieto (1992), Lipski's analysis relies on a type of Prosodic Circumscription that does not respect prosodic constituency. Under strict observance of Prosodic Morphology Theory, his analysis is unable to generate the correct TF's for ante-penultimately-stressed SF's. This causes the apparent generality of this unified account to fall apart. Prosodic Morphology Theory is also disregarded by those applications of Prosodic Circumscription that delimit the first consonant of the word and the first consonant of the hypocoristic because consonants are not prosodic units, either. In sum, Lipski's analysis seems to capture a single phonological process only because it does not respect constituency at all times. This account works at the expense of unnecessary complications reflected by the many applications of Prosodic Circumscription and Template Mapping, not to mention the need to specify at what point of the derivation Stray Erasure should apply or not apply so that the correct results may be obtained.
4.2 Word minimization in Spanish truncation processes

In their study of Diyari reduplication, McCarthy and Prince (1994) find that the reduplicant exhibits a templatic form which happens to coincide with the Minimal Word (MinWd) in this language: \([\sigma\sigma]\text{PWD}\). They propose that MinWds are unmarked Prosodic Words (PWds) that arise when the following PWd-Restrictor constraints are strictly respected.

(20) Prosodic-Word Restrictor Constraints:

\begin{align*}
\text{PARSE-SYLL:} & \quad \text{Parse syllables} \\
& \quad \text{All syllables are parsed into feet.}
\end{align*}

\begin{align*}
\text{FTBIN:} & \quad \text{Foot Binarity} \\
& \quad \text{Feet are binary on a syllabic or moraic analysis.}
\end{align*}

\begin{align*}
\text{ALL-FT-L/R:} & \quad \text{All Feet Left/Right} \\
& \quad \text{Every foot stands in initial/final position in the PWd.}
\end{align*}

Perfect satisfaction of the three PWd-Restrictor constraints is only possible when the PWd contains a single binary foot. This is because PARSE-SYLL demands that all syllables in the output be parsed by a foot. Additionally, FTBIN requires footing to be binary. Satisfaction of FTBIN may be accomplished moraically, in quantity-sensitive languages, or syllabically, in quantity-insensitive ones. With regards to ALL-FT, there are two versions of this constraint: ALL-FT-L requires every foot to be word-initial, whereas ALL-FT-R requires all feet to be word-final. According to these alignment conditions, only a form that contains a single foot may fully comply with ALL-FT: \([(\sigma\sigma)\text{PWD}]\). Note that any form that contains more than one foot can not help falling in violation of ALL-FT because each edgemost foot would be separated from the opposite
end of the PWd by at least another foot: \([\sigma\sigma\sigma_2(\sigma\sigma)_{F1}]_{PWd}\). Even when dominated, the effect of ALL-Ft-L/R may still be seen. Depending on what version of ALL-Ft is active, this constraint forces feet to be as close to the left or right margins of the PWd as possible.

(21) **ALL-Ft-L**

<table>
<thead>
<tr>
<th>Input: (\sigma\sigma\sigma\sigma)</th>
<th>ALL-Ft-L</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ([\sigma(\sigma\sigma)<em>{F2}(\sigma\sigma)</em>{F1}]_{PWd})</td>
<td>F1: (\sigma\sigma\sigma) ! F2: (\sigma)</td>
</tr>
<tr>
<td>b. ([(\sigma\sigma)<em>{F2}\sigma(\sigma\sigma)</em>{F1}]_{PWd})</td>
<td>F1: (\sigma\sigma\sigma) !</td>
</tr>
<tr>
<td>c. ([\sigma(\sigma\sigma)<em>{F2}(\sigma\sigma)</em>{F1}\sigma]_{PWd})</td>
<td>F1: (\sigma\sigma)</td>
</tr>
</tbody>
</table>

(22) **ALL-Ft-R**

<table>
<thead>
<tr>
<th>Input: (\sigma\sigma\sigma\sigma)</th>
<th>ALL-Ft-R</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ([\sigma(\sigma\sigma)<em>{F2}(\sigma\sigma)</em>{F1}]_{PWd})</td>
<td>F2: (\sigma\sigma)</td>
</tr>
<tr>
<td>b. ([(\sigma\sigma)<em>{F2}\sigma(\sigma\sigma)</em>{F1}]_{PWd})</td>
<td>F2: (\sigma\sigma\sigma) !</td>
</tr>
<tr>
<td>c. ([(\sigma\sigma)<em>{F2}(\sigma\sigma)</em>{F1}\sigma]_{PWd})</td>
<td>F2: (\sigma\sigma\sigma) ! F1: (\sigma)</td>
</tr>
</tbody>
</table>

ALL-Ft quantifies over all feet. That means, that every single foot is evaluated on the distance that separates it from the relevant edge of the PWd. This distance is measured in terms of syllables. In tableaux (21) and (22), all candidates fall in violation of ALL-Ft because they contain more than one foot. Nonetheless, optimal satisfaction of these constraints is achieved through their minimal violation by avoiding any unfooted syllables between the edge of each foot and the relevant edge of the PWd (21c, 22a).

When ALL-Ft along with PARSE-SYLL and FT-BIN are top-ranking, the optimal output form may contain no more and no less than a single binary foot regardless the
number of syllables in the input form. (The distribution of primary stress indicates that 
ALL-Ft-R is the foot-alignment constraint that is active in Spanish: \( \text{[mi.(nú.to)F]} \)PWd 'minute'. Its counterpart, ALL-Ft-L will be disregarded hereafter)

(23) \( \text{Ft-Bin, Parse-Syll, All-Ft-R} \)

<table>
<thead>
<tr>
<th>Input:</th>
<th>Ft-Bin</th>
<th>Parse-Syll</th>
<th>All-Ft-R</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ( [(\sigma)<em>{F2}((\sigma\sigma)</em>{F1})]_{\text{PWD}} )</td>
<td>*!</td>
<td></td>
<td>F2: ( \sigma\sigma )</td>
</tr>
<tr>
<td>b. ( [(\sigma\sigma)<em>{F2}(\sigma)</em>{F1}]_{\text{PWD}} )</td>
<td>*!</td>
<td></td>
<td>F2: ( \sigma )</td>
</tr>
<tr>
<td>c. ( [(\sigma\sigma)<em>{F1}\sigma]</em>{\text{PWD}} )</td>
<td>*!</td>
<td>F1: ( \sigma )</td>
<td></td>
</tr>
<tr>
<td>d. ( [\sigma(\sigma\sigma)<em>{F1}]</em>{\text{PWD}} )</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. ( [((\sigma\sigma)<em>{F1}]</em>{\text{PWD}} )</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Any candidate preserving more than two syllables is doomed for it can not help 
failing in violation of at least one of the PWd-Restrictor constraints (23a-c). Benua 
(1995) uses this approach to account for Japanese hypocoristics. Word minimality is 
enforced when the PWd-Restrictor constraints dominate faithfulness constraints. In this 
section, I develop an analysis along these lines to account for the two types of truncation 
that occur in Spanish. The following constraints are active as well.

(24) \( \text{Ft-Form(Troc): Trochaic Foot Form} \)

Align the left edge of a foot with the left edge of its head (a 
stressed syllable).

(25) \( \text{Max(SF-TF): Maximization of the Source Form} \)

Every element in the Source Form has a correspondent in 
the Truncated Form. (e.g. syllable, segment, etc.)
Given that in Spanish the single foot contained in TF is always a trochee (e.g. [(Xé.sus)] < [Xe.(sús)] 'Jesus'), the constraint FT-FORM(Troc) must be top-ranking. On the other hand, the fact that TF forms a MinWd at the expense of losing the correspondents of some SF-elements (e.g. [(iX.na)] < [iX.(ná.θjo)] 'Ignatius') is an indication that the MAX(SF-TF) constraint family is dominated by the PWd-Restrictor constraints. The ranking FT-BIN, PARSE-SYLL, ALL-FT-L/R >> MAX(SF-TF) is the hallmark of truncation. It is particular to Spanish that ALL-FT-R and FT-FORM(Troc) are high-ranking. In other languages, it may be ALL-FT-L and FT-FORM(Iamb) that are active, instead. But across languages, when the PWd-Restrictor constraints outrank MAX(SF-TF), identity between TF and SF is often sacrificed in order to obtain the unmarked PWd. Only when SF is disyllabic, TF may have a correspondent for every SF-element (e.g. [(Xó.se)] < [(Xo.sé)] 'Joseph'). Whenever SF exceeds two syllables, it is impossible for TF to remain identical, as illustrated by the following tableau.

\[
\begin{array}{|c|c|c|c|c|}
\hline
\text{SF:} & \sigma\sigma\sigma\sigma\sigma & \text{FT-FORM(Troc)} & \text{FT-BIN} & \text{PARSE-SYLL} & \text{ALL-FT-R} \\
\hline
\text{a.} & [(\dot{\sigma}(\sigma\sigma))\sigma\sigma] & *! & * & & \\
\hline
\text{b.} & [(\sigma(\dot{\sigma}\sigma))\sigma\sigma] & & *! & & \\
\hline
\text{c.} & [(\dot{\sigma}\sigma)(\dot{\sigma}\sigma)] & & *! & & * \\
\hline
\text{d.} & [\dot{\sigma}\sigma] & & & & *** \\
\hline
\text{e.} & [(\sigma\dot{\sigma})] & *! & & & *** \\
\hline
\end{array}
\]

Truncation is then the price that must be paid for word minimization. To the detriment of MAX(SF-TF), the dominant PWd-Restrictor constraints force TF not to exceed
two syllables. FT-FORM(Troc) makes sure that the foot that parses these two syllables is a trochee. The candidate that meets these requirements is the optimal Spanish TF (26d). However, there are two different types of truncation in this language. Recall from section 2 that, in Type-A Hypocoristics, TF preserves the initial syllables of SF whereas, in Type-B Hypocoristics, it is the final syllables that are preserved. Even though both truncation processes share the ranking in (26), they differ with respect to other relevant constraints.

4.2.1 A constraint-based account of Type-A truncated forms

The fact that Spanish clippings and hypocoristics always preserve some segment that sits at one of the peripheries of SF suggests that ANCHORing is being enforced.

(27) \textsc{Anchor} \textsc{(SF-TF)L}:
\hspace{1cm} \textit{Anchor the left edge of the Source Form}
Any element at the left periphery of the Source Form has a correspondent at the left periphery of the Truncated Form.

(28) \textsc{Anchor} \textsc{(SF-TF)R}:
\hspace{1cm} \textit{Anchor the right edge of the Source Form}
Any element at the right periphery of the Source Form has a correspondent at the right periphery of the Truncated Form.

Given that in Type-A Hypocoristics the leftmost part of SF may never be truncated, the correspondence constraint ANCHOR(SF-TF)L must outrank FT-BIN, PARSE-SYLL and ALL-Ft-L. However, since the rightmost part of SF may be lost, FT-BIN, PARSE-SYLL and ALL-Ft-L must dominate ANCHOR(SF-TF)R. For reasons of space in the tableaux, I will use PRC to subsume the PWd-Restrictor constraints FT-BIN, PARSE-SYLL and ALL-Ft-L.
Candidate (29b) is identical to SF but, but because it contains an unfooted syllable, it is ruled out by \textsc{parse-syll}, a member of PRC. Candidates (29a) and (29b) manage to satisfy PRC by leaving out the correspondent of one SF-syllable. Of these two, (29a) is the winner because it also complies with higher-ranking \textsc{anchor(sf-tf)}L. There is, however, another strong competitor that must be considered. A candidate that creates an unmarked PWd by combining the initial and final syllables of SF (e.g. \([\text{á.\text{θ}ja}] < [\text{a.(lí.\text{θ}ja})]\) would actually be expected to win over (29a) because it would satisfy not only \textsc{anchor(sf-tf)}L but \textsc{anchor(sf-tf)}R, as well. It is another correspondence constraint that precludes this type of truncation.

(30) \textsc{input contiguity}: \textit{Input Contiguity} ('No Skipping')

The portion of the Truncated Form (TF) standing in correspondence forms a contiguous string.

Range (R) is a single contiguous string in SF.

Like \textsc{max(sf-tf)} and \textsc{anchor(sf-tf)}L/R, \textsc{input contiguity} enforces the identity between SF and TF. The reason why the optimal TF may rarely be identical to SF is because two of these correspondence constraints are dominated by PRC. That is, PRC
ANCHOR(SF-TF)R, MAX(SF-TF). However, TF must still bear a certain degree of similarity with respect to SF because two correspondence constraints dominate the set of constraints that force truncation: ANCHOR(SF-TF)L, I-CONTIGUITY >> PRC. Under this ranking, the optimal TF must be a MinWd formed with the correspondents of the two leftmost syllables of SF (31a).

\[
\begin{array}{|c|c|c|c|c|}
\hline
\text{SF:} & \text{ANC(SF-F)L} & \text{I-CONTIG} & \text{PRC} & \text{ANC(SF-F)R} & \text{MAX(SF-TF, } \sigma) \\
\hline
\text{a. } & [\text{kris.ti}] & & * & * \\
\text{b. } & [\text{kris.ti.na}] & & *! & * \\
\text{c. } & [(\text{kris.na})] & & *! & * \\
\text{d. } & [(\text{ti.na}]] & & *! & * \\
\hline
\end{array}
\]

This approach differs from Colina's (1995) constraint based-account in two respects. First, it does not resort to any templatic constraints such as the one Colina proposes for Spanish.

\[
\text{TF}=\sigma\sigma: \quad \text{Disyllabic Truncated Form}
\]

The optimal truncated form consists of a syllabic trochee.

Instead, the fact that the optimal TF is equivalent to a single syllabic trochee follows from the high rank of FT-FORM(Troch) and the set of PWd-Restrictor constraints: FT-BIN, PARSE-SYLL, ALL-FT-R. This has the advantage that all of these constraints are universal, as opposed to a single constraint designed specifically for the process of truncation. Under the approach I propose, no template is necessary. The templatic form of Spanish clippings and hypocoristics is the result of constraint interaction. Specifically,
an effect of the ranking $F\text{-}\text{FORM}(\text{Troch}), F\text{-}\text{BIN}, \text{PARSE}\text{-}\text{SYLL}, \text{ALL}\text{-}F\text{T}\text{-}R \gg \text{MAX}(\text{SF}\text{-}TF)$. In other words, instead of complicating the grammar with the addition of new constraints, truncation is derived from one of the key properties of Optimality Theory: constraint interaction. I conclude that there is not need to postulate constraints that are language particular or that may only be active in a particular process.\

Secondly, Colina's analysis does not take ANCHORing into consideration. Without $\text{ANCHOR( SF}\text{-}TF)\text{L}$, nothing rules out those candidates that manage to form a trochaic foot, but fail to do so by using the two leftmost syllables of $\text{SF}$. To illustrate this point, consider the selection of the optimal $\text{TF}$ according to the constraint ranking proposed by Colina.

\begin{equation}
\text{TF} = \sigma \sigma, \text{CONTIGUITY} \gg \text{MAX}
\end{equation}

<table>
<thead>
<tr>
<th>$\text{SF}$: [al.(fré.δo)]</th>
<th>$\text{TF} = \sigma \sigma$</th>
<th>CONTIGUITY</th>
<th>MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [al.(fré.δo)]</td>
<td>* !</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. [(á.l. fre)]</td>
<td></td>
<td>δ o</td>
<td></td>
</tr>
<tr>
<td>c. [(ál.δo)]</td>
<td>* !</td>
<td>fre</td>
<td></td>
</tr>
</tbody>
</table>

The templatic constraint $\text{TF} = \sigma \sigma$ rules out (33a) because this candidate exceeds the two-syllable limit. (33c) is ruled out by CONTIGUITY because it skips one syllable. This would make (33b) triumphant. But this is only apparent. When the form [(fré.δo)] is

\footnote{Cabré and Kenstowicz (1995) propose a similar constraint in order to account for Catalan hypocoristics. In their analysis, $\text{MINPRWD}$ is a hypocoristic-specific constraint that forces minimal structure at the level of the Prosodic Word. Given that this analysis also relies on $\text{FT}\text{-}\text{BIN}, \text{PARSE}\text{-}\text{SYLL}$ and $\text{ALIGN}\text{-}\text{FT}$, which are universal constraints that accomplish the same effect, it is not only redundant but very costly to postulate such type of constraints.}
taken into consideration, this account is unable to select a winner. Since there is nothing in Colina's analysis that favors [(ál.fre)] over [(fré.δo)], her account overgenerates. Under the analysis I propose, [(ál.fre)] is better than [(fré.δo)] or any other competing candidate because it is the only form that meets the optimal degree of identity between SF and TF that the correspondence constraints ANCHOR(SF-TF)L and I-CONTIGUITY are able to secure through their domination of PRC (34b).

(34) \textit{ANC(SF-TF)L}, I-CONTIGUITY >> PRC >> \textit{ANC(SF-F)R}, \textit{MAX(SF-TF, σ)}

<table>
<thead>
<tr>
<th>SF: ( [al.(fré.δo)] )</th>
<th>ANC(SF-F)L</th>
<th>I-CONTIG</th>
<th>PRC</th>
<th>ANC(SF-F)R</th>
<th>MAX(SF-TF, σ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ( [al.(fré.δo)] )</td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. ( [ál.fre] )</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. ( [(ál.δo)] )</td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. ( [(fré.δo)] )</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This constraint ranking selects a single optimal TF. The winner is always the candidate that preserves the two leftmost syllables of SF. It is the partial ranking PRC >> MAX(SF-TF, σ) that forces a reduction in the number of syllables from SF to TF. The reduction in the number of segments is due to the fact that MAX(SF-TF, seg) is also outranked by PRC. Even when a MAX(SF-TF, seg) violation could be spared by parsing a segment from a third syllable into the syllabic trochee (e.g. *[(dó.lor)] < [do.(ló.res)] ), such alternative is never favored. To account for this, I adopt a constraint proposed by McCarthy and Prince (1994a) and also used by Colina (1995).
(35) **ST-ROLE:** *Structural Role*

A segment in SF and its correspondent in TF must have identical syllabic roles.

**ST-ROLE** forces TF to mimic the syllabic structure of SF. When **ST-ROLE** dominates \( \text{MAX}(\text{SF-TF}, \text{seg}) \), preserving a segment with a different syllabic role is more costly than losing it. This explains why the two syllables of TF are a replica of the first two syllables of SF. To reproduce the syllabic structure of SF, the optimal TF must contain only segments that belong to the first two SF-syllables (36b,b').

(36) **ST-ROLE >> MAX(SF-TF, seg)**

<table>
<thead>
<tr>
<th>SF:</th>
<th>[do.(ló.res)]</th>
<th>ST-ROLE</th>
<th>MAX(SF-TF, seg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[(dó.lor)]</td>
<td>* !</td>
<td>es</td>
</tr>
<tr>
<td>b. ⊥</td>
<td>[(dó.lo)]</td>
<td></td>
<td>res</td>
</tr>
<tr>
<td>SF:</td>
<td>[mar.ɣa.(ría)]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a'. ⊥</td>
<td>[(má.rɣar)]</td>
<td>* !</td>
<td>ita</td>
</tr>
<tr>
<td>b'. ⊥</td>
<td>[(má.rɣa)]</td>
<td></td>
<td>rita</td>
</tr>
</tbody>
</table>

However, it is not always the case that the two syllables of TF are identical to the first two syllables of SF. As noted by Prieto (1992a), when the peninitial syllable of SF is heavy, the tendency is to turn it into a light one (e.g. [(má.ti)] < [ma.(tíl.de)], [(má.nu)] < [ma.(nwél)]). A set of constraints that regulate syllable well-formedness is responsible for this mismatch between SF and TF.

(37) **COMPLEXN:** *No Complex Nuclei*

Syllable nuclei do not branch.
(38) **NoCoda:**  

*No Syllable Codas*

Syllables do not have codas.

*ComplexN and NoCoda favor light open syllables. Given that heavy syllables are simplified through deletion of one of the segments in the rhyme, the well-formedness constraints NoCoda and *ComplexN must dominate the correspondence constraint MAX(SF-TF, seg). Furthermore, *ComplexN must also dominate ST-ROLE since it is possible to simplify a diphthong by changing the syllabic role of a high vocoid: [i] < [j], [u] < [w].

(39) **NoCoda, *ComplexN >> ST-ROLE >> MAX(SF-TF, seg)**

<table>
<thead>
<tr>
<th>SF: [ma.(nwél)]</th>
<th>NoCoda</th>
<th>*ComplexN</th>
<th>ST-ROLE</th>
<th>MAX(SF-TF, seg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td><img src="image" alt="ma.nu" /></td>
<td></td>
<td>*</td>
<td>el</td>
</tr>
<tr>
<td>b.</td>
<td><img src="image" alt="ma.nwe" /></td>
<td>*</td>
<td>!</td>
<td>1</td>
</tr>
<tr>
<td>c.</td>
<td><img src="image" alt="ma.nwel" /></td>
<td>*</td>
<td>!</td>
<td>*</td>
</tr>
</tbody>
</table>

Even though SF is disyllabic in (39), TF may not be identical because such move would result in violations of NoCoda and *ComplexN (39c). Candidate (39b) avoids a NoCoda violation by leaving out the correspondent of one SF-segment. But this is of no avail because it still runs afoul of ComplexN. Candidate (39a) is the winner because it does away with all syllable markedness. There is, however, one more fact that needs to be explained about tableau (39). Why should the second rather than the first vocoid of the diphthong be lost? Note that a candidate that leaves out the first nuclear element, would also comply with *ComplexN plus it would have the advantage of avoiding a violation of ST-ROLE (cf. *[(má.ne)] < [ma.(nwél)]* ). The key to answer this question is
CONTIGUITY. If the first member of the diphthong were left out, an internal segment
would be skipped. This indicates that the correspondence constraint I-CONTIGUITY
dominates *COMPLEXN. So, even though losing the correspondent of an SF-segment is
an affordable price to create unmarked syllables, such loss is too costly when an internal
segment must be sacrificed. To put it in a different way, the tendency to form unmarked
syllables in TF is restricted by the need to preserve a contiguous string. In the following
tableau, candidate (40c) is the winner because it simplifies all marked syllable structure
without disturbing the contiguity of the melodic string. All other candidates either
contain a syllable that is more marked (40a,b) or end up skipping an internal segment in
the attempt to avoid violations of the constraints that penalize syllable markedness (40d).

(40) I-CONTIGUITY >> NOCODA, *COMPLEXN >> ST-ROLE >> MAX(SF-TF, seg)

<table>
<thead>
<tr>
<th>SF: [Xa.(βjér)]</th>
<th>I-CONTIG</th>
<th>NOCODA</th>
<th>*COMPLEXN</th>
<th>ST-ROLE</th>
<th>MAX(SF-TF, seg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [Xá.βjer]</td>
<td>* !</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. [Xá.βje]</td>
<td></td>
<td>* !</td>
<td></td>
<td>r</td>
<td></td>
</tr>
<tr>
<td>c. [Xá.βi]</td>
<td></td>
<td></td>
<td>*</td>
<td>er</td>
<td></td>
</tr>
<tr>
<td>d. [Xá.βe]</td>
<td>* !</td>
<td></td>
<td></td>
<td>j r</td>
<td></td>
</tr>
</tbody>
</table>

In contrast, when the initial syllable of SF is the marked syllable (e.g. [(krís.ti)]
< [kris.(ti.na)] 'Christine'; [(djó.ni)] < [djo.(ni.sjo)] 'Dionisio'), nothing can be done in
order to reduce its markedness. This is because I-CONTIGUITY would be affected if any
segment in the initial syllable were deleted. Consequently, preserving the offending
segments is better than skipping them. This explains why a complex nucleus nor a coda

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segment that belongs to the initial syllable of SF may ever be simplified or lost in TF, as it is the case for candidates (41c,c') below.

(41)  I-CONTIGUITY  >> NOCODA, *COMPLEXN >> ST-ROLE  >>  MAX(SF-TF, seg)

<table>
<thead>
<tr>
<th>SF:</th>
<th>I-CONTIG</th>
<th>NOCODA</th>
<th>*COMPLEXN</th>
<th>ST-ROLE</th>
<th>MAX(SF-TF, seg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>(kris.tin)]</td>
<td>* * !</td>
<td></td>
<td></td>
<td>a</td>
</tr>
<tr>
<td>b.</td>
<td>((krís.ti)</td>
<td>*</td>
<td></td>
<td></td>
<td>na</td>
</tr>
<tr>
<td>c.</td>
<td>[(krí.ti)</td>
<td>* !</td>
<td></td>
<td></td>
<td>s na</td>
</tr>
<tr>
<td>SF:</td>
<td>[djo.(ni.sjo)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>[(djó.nis)]</td>
<td>* !</td>
<td>*</td>
<td>*</td>
<td>jo</td>
</tr>
<tr>
<td>b'.</td>
<td>[(djó.ni)]</td>
<td></td>
<td>*</td>
<td></td>
<td>sjo</td>
</tr>
<tr>
<td>c'.</td>
<td>[(di.ni)]</td>
<td>* !</td>
<td></td>
<td>*</td>
<td>o sjo</td>
</tr>
</tbody>
</table>

I propose to account for the option of preserving the coda segment of the peninitial syllable of SF (e.g. [(fér.na)] ~ [(fér.nan)] < [fer.(nán.do)]) through a condition on permissible syllable codas. As noted by Prieto (1992), the only consonants that may close the second syllable of TF are [r, s, n, l]. Whereas these segments differ in manner, they share the same place of articulation. They are all coronal sounds. This observation suggests that there is a condition against non-coronal segments in coda position.

(42)  CODACond:       Coda Condition

Only coronal segments may be parsed under the syllable coda.

However, there are other coronal segments in the language that may not close the second syllable of TF. They are the palatal sounds [č, ĵ, ň, (λ)] and the stops [d, t]. The first set of segments may be ruled out by adding the feature [+anterior] since [č, ĵ, ň, (λ)]
are all [-anterior] coronals. CODACONDITION would then state that only [+anterior] coronals may be parsed under the syllable coda. Nonetheless, this still does not discard [d, t], which are [+anterior] coronals but with lower sonority than [r, s, n, l]. This makes it necessary to add a sonority specification to the CODACONDITION. I follow Martínez-Gil (1996, 1997) in his proposal of a sonority scale for Spanish consonants.

(43) **Spanish Sonority Scale**:\(^3\) Martínez-Gil (1996, 1997)

<table>
<thead>
<tr>
<th>Obstruents</th>
<th>Sonorants</th>
</tr>
</thead>
<tbody>
<tr>
<td>p, t, k, b, d, g, f</td>
<td>s, (θ), ċ, ĵ, x, (h)</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>m, n, ñ, (λ), r</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Elizabeth Hume points out that the fact that /s/ patterns with coronal sonorants would indicate that the sonority value of this segment is 3 rather than 2. In the absence of independent evidence in support of the claim that the sonority of /s/ is lesser than 3, I opt for raising this segment one scale up to place it at sonority scale 3. But as Martínez-Gil points out (personal communication), consistency with this relocation of /s/ in the sonority scale would require that the /θ/ of Peninsular dialects be raised one scale up as well, since /s/ and /θ/ pattern in a similar way in those dialects that have the phonemic contrast /s/ ~ /θ/. Making this adjustment to Martínez-Gil's sonority scale, the sonority values I assume here are the following.

\(^3\) The parenthesis signal segments that only occur in certain dialects.
(44) Spanish Sonority Scale: Adapted from Martinez-Gil (1996, 1997)

<table>
<thead>
<tr>
<th>Obstruents</th>
<th>Sonorants</th>
</tr>
</thead>
<tbody>
<tr>
<td>p, t, k, b, d, g, f</td>
<td>č, ğ, x (h)</td>
</tr>
<tr>
<td>č, ġ, x (h)</td>
<td>s, (θ), m, n, ň, (λ), r</td>
</tr>
<tr>
<td>s, (θ), m, n, ň, (λ), r</td>
<td>l, r</td>
</tr>
</tbody>
</table>

Incorporating the feature [+anterior] along with these sonority values, the constraint CODACOND may be redefined to exclude all consonants but [r, s, n, l].

(45) CODACOND: Coda Condition (Final Version)

Only [+anterior] coronals with a minimum sonority of 3 may be parsed under the syllable coda.

Along with NOCODA and *COMPLEXCODA, CODACOND is part of a set of constraints that militate against syllable codas. These constraints are part of a continuum that regulates the degree of markedness tolerated at the right margin of the syllable.

(46) Coda Constraints:

*COMPLEXCODA ⊃ CODACOND ⊃ NOCODA

When *COMPLEXCODA is the active constraint, codas are tolerated as long as they do not branch. When instead, it is CODACOND that is active, only those segments that satisfy the condition may be parsed as codas. But most strictly, syllables must be coda-free when NOCODA is the active constraint. It is my claim that, for some speakers, the active coda-constraint in Type-A Hypocoristics is CODACOND, whereas for some others, it is NOCODA. The second syllable of TF may be open or closed depending on which of these constraints is the active one. In the examples above, it was assumed that NOCODA
is active. In such case, TF is penalized for every coda segment it contains regardless the makeup of the segment. For convenience, this is illustrated again in the following tableau with the example *fërna* < *fernándo*.

(47) \[\text{I-CONTIGUITY} \gg \text{NOCODA} \gg \text{MAX}(\text{SF-TF, seg})\]

<table>
<thead>
<tr>
<th>SF: [fer.(nán.do)]</th>
<th>I-CONTIGUITY</th>
<th>NOCODA</th>
<th>MAX(SF-TF, seg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [(fér.nan)]</td>
<td>* * !</td>
<td>do</td>
<td></td>
</tr>
<tr>
<td>b. [(fér.na)]</td>
<td>*</td>
<td>ndo</td>
<td></td>
</tr>
<tr>
<td>c. [(fé.na)]</td>
<td>* !</td>
<td>r ndo</td>
<td></td>
</tr>
</tbody>
</table>

Given that NOCODA dominates MAX(SF-TF, seg), parsing a segment as a coda is worse than losing it (47a). However, since NOCODA is outranked by I-CONTIGUITY, TF must preserve a coda segment whose omission would entail the skipping of an element in the melodic string (47c). Under this ranking, the optimal TF is the candidate that drops the coda of the peninitial syllable but preserves the coda of the initial one (47b). On the other hand, when it is CODACOND that is the active coda-constraint, TF is penalized only for those coda segments that are not [+anterior] coronals with sonority 3 or higher. According to this, a segment parsed as the coda of the peninitial syllable of SF may be preserved in TF as long as it meets this requirement (48a).

(48) \[\text{I-CONTIGUITY} \gg \text{CODACOND} \gg \text{MAX}(\text{SF-TF, seg})\]

<table>
<thead>
<tr>
<th>SF: [fer.(nán.do)]</th>
<th>I-CONTIGUITY</th>
<th>CODACOND</th>
<th>MAX(SF-TF, seg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [(fér.nan)]</td>
<td></td>
<td>do</td>
<td></td>
</tr>
<tr>
<td>b. [(fér.na)]</td>
<td></td>
<td>ndo !</td>
<td></td>
</tr>
<tr>
<td>c. [(fé.na)]</td>
<td>* !</td>
<td>r ndo</td>
<td></td>
</tr>
</tbody>
</table>
A non-coronal coda segment may be preserved in TF only when it belongs to the initial syllable of SF (49a). Deleting it would give rise to a violation of I-CONTIGUITY.

(49)  I-CONTIGUITY >> CODACOND >> MAX(SF-TF, seg)

<table>
<thead>
<tr>
<th>SF:</th>
<th>I-CONTIGUITY</th>
<th>CODACOND</th>
<th>MAX(SF-TF, seg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [iX.ν.(ná.θjo)]</td>
<td></td>
<td>*</td>
<td>θjo</td>
</tr>
<tr>
<td>b. [(i.νa)]</td>
<td>* !</td>
<td></td>
<td>X θjo</td>
</tr>
</tbody>
</table>

When the non-coronal coda segment belongs to the peninitial syllable of SF, I-CONTIGUITY is no longer relevant and the offending segment may not be spared (50b).

(50)  I-CONTIGUITY >> CODACOND >> MAX(SF-TF, seg)

<table>
<thead>
<tr>
<th>SF:</th>
<th>I-CONTIGUITY</th>
<th>CODACOND</th>
<th>MAX(SF-TF, seg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [(kόn.θep)]</td>
<td>* !</td>
<td></td>
<td>θjόn</td>
</tr>
<tr>
<td>b. [(kόn.θe)]</td>
<td></td>
<td>p</td>
<td>θjon</td>
</tr>
<tr>
<td>c. [(kό.θe)]</td>
<td>* !</td>
<td></td>
<td>n p θjon</td>
</tr>
</tbody>
</table>

In order to account for these same facts, Colina (1995) appeals to constraint-ranking unspecification. She claims that the constraints NOCODA and MAX are unranked with respect to one another. The argument is that if more than one ranking is possible, then more than one output form is to be expected. According to this, when MAX dominates NOCODA, a consonant parsed as the coda of the peninitial syllable of SF must be preserved in TF. Conversely, when NOCODA dominates MAX, the same segment has to be sacrificed. However, even if the ranking between NOCODA and MAX is assumed to
be unspecified, such approach can not explain why the following alternation is not possible.

(51)  

<table>
<thead>
<tr>
<th>SF</th>
<th>TF</th>
</tr>
</thead>
<tbody>
<tr>
<td>[kon.θep.(θjón)]</td>
<td>[(kón.θe)] ~ *[(kón.θep)]</td>
</tr>
<tr>
<td>[da.(βiδ)]</td>
<td>[(dá.βi)] ~ *[(dá.βiδ)]</td>
</tr>
</tbody>
</table>

As reported by Prieto (1992), when the coda consonant of the peninitial syllable of SF is not coronal, the preservation of this segment is never an option. The ranking NoCoda >> Max is able to account for TF's whose second syllable is open. However, the ranking Max >> NoCoda wrongly predicts that the forms *[(kón.θep)] and *[(dá.βiδ)] should be possible when they are actually not. The solution I propose has the advantage that it does not overgenerate and it provides an explanation for the fact that only a limited set of consonants may close the second syllable of TF (50a).

The non-preservation of the consonant that closes the peninitial syllable of SF may also be interpreted as a strategy to improve foot form. As pointed out by Hayes (1985), the preferred trochaic foot type corresponds to the form [L L] or [μ μ], whereas [L H] or [μ [μμ]] is the preferred iambic foot type. By omitting the correspondent of the consonant that closes the second syllable of SF (e.g. [(Xé.su)] < [Xe.(sús)] 'Jesus'), TF becomes more like a trochee and less like an iamb: [μ μ] < [μ [μμ]]. The same effect is derived when one of the members of a diphthong in the peninitial syllable of SF is left without a correspondent in TF (e.g. [(Xú.li)] < [(Xú.lja)] 'Julie'). Developing this approach, the prosodic constraint FtForm[μ μ] would dominate the correspondence constraint Max(SF-TF, seg).
(52) \( \text{FtFORM}[\mu \mu] >> \text{MAX(sf-tf, seg)} \)

<table>
<thead>
<tr>
<th>SF: ([\text{Xe.}(\text{sús})])</th>
<th>FtFORM[(\mu \mu)]</th>
<th>MAX(sf-tf, seg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ([\text{(Xé}\mu.\text{sú}\mu\mu}])</td>
<td>* !</td>
<td></td>
</tr>
<tr>
<td>b. ([\text{(Xé}\mu.\text{sú}\mu}])</td>
<td>s</td>
<td></td>
</tr>
</tbody>
</table>

| SF: \([\text{Xú.}|lja]\) |
|----------------------------|
| a'. \([\text{(Xú}\mu.|\text{l}|\mu\mu}]\) | * ! | |
| b'. \([\text{(Xú}\mu.|\text{l}|\mu}]\) | a | |

The optimal candidates (52b, b') sacrifice the correspondent of an SF-segment to insure that the second syllable of TF is light so that the optimal trochaic foot type may be obtained.

Casado Velarde (1984) presents a sample of clipped words resulting from a current trend among young people in Spain to reduce polysyllabic words to a disyllabic form (e.g. \textit{bici} < \textit{bicicleta} 'bicycle', \textit{mili} < \textit{milicia} 'army'). The process that yields Type-A Hypocoristics is now being extended to adjectives and nouns. The examples in (53) below are representative.

(53) \textbf{Spanish clippings:}

<table>
<thead>
<tr>
<th>SF</th>
<th>TF</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>([\text{am.pli.fí.</td>
<td>ka.}(\delta</td>
<td>ó</td>
</tr>
<tr>
<td>([\text{de.pre.}(\text{sjón})])</td>
<td>([\text{(dé.pre)}])</td>
<td>'depression'</td>
</tr>
<tr>
<td>([\text{ma.ni.fes.ta.}(\theta</td>
<td>jón)])</td>
<td>([\text{(má.</td>
</tr>
<tr>
<td>([\text{po.li.}(\theta</td>
<td>i.</td>
<td>a)])</td>
</tr>
<tr>
<td>([\text{pro.tek.}(\theta</td>
<td>jón)])</td>
<td>([\text{(pró.</td>
</tr>
<tr>
<td>([\text{θo.o.}</td>
<td>(ló.Xi.</td>
<td>).ko})</td>
</tr>
</tbody>
</table>
The constraint ranking I established above also accounts for these new formations. The optimal TF is a candidate that minimizes in order to comply with the PWd-Restrictor constraints (PRC).

(54) \textbf{ANCH(SF-TF)L, I-CONTIGUITY} \gg \textbf{PRC} \gg \textbf{ANCH(SF-TF)R, MAX(SF-TF)}

<table>
<thead>
<tr>
<th>SF: [po.li.(\thetai.a)]</th>
<th>ANCH(SF-TF)L</th>
<th>I-CONT</th>
<th>PRC</th>
<th>ANCH(SF-TF)R</th>
<th>MAX(SF-TF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [\thetai.a]</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td>po li</td>
</tr>
<tr>
<td>b. [\thetai.a]</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td>po</td>
</tr>
<tr>
<td>c. [po.li.(\thetai.a)]</td>
<td></td>
<td></td>
<td>*! *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. [p\thetai.]</td>
<td></td>
<td>*</td>
<td></td>
<td>si a</td>
<td></td>
</tr>
<tr>
<td>e. [p\thetai.a]</td>
<td></td>
<td></td>
<td></td>
<td>li si</td>
<td></td>
</tr>
<tr>
<td>f. [(\thetai.\thetai)]</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td>po a</td>
</tr>
</tbody>
</table>

Among the three candidates that undergo minimization in tableau (54), candidate (54d) is selected as optimal because it faithfully reproduces the two leftmost syllables of SF in compliance with the top-ranking constraints \textbf{ANCHOR(SF-TF)L} and \textbf{I-CONTIGUITY}. However, the optimal TF may not remain identical to the two leftmost syllables of SF when the peninitial syllable of SF is marked. This is due to the fact that the effects of well-formedness constraints such as \textbf{NOCODA/CODACOND}, which dominate the \textbf{MAX(SF-TF)} constraint family, can emerge in a context where \textbf{I-CONTIGUITY} is not relevant (55b).

(55) \textbf{I-CONTIGUITY} \gg \textbf{NOCODA} \gg \textbf{MAX(SF-TF, seg)}

<table>
<thead>
<tr>
<th>SF: [pro.tek.\thetaj]</th>
<th>I-CONTIGUITY</th>
<th>NOCODA</th>
<th>MAX(SF-TF, seg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [\thetaj]</td>
<td>*!</td>
<td>sjon</td>
<td></td>
</tr>
<tr>
<td>b. [\thetaj]</td>
<td>*!</td>
<td>ksjon</td>
<td></td>
</tr>
</tbody>
</table>

205
Because syllable markedness may only be avoided when I-CONTIGUITY is not affected, TF may not always be free of all marked structure. In this regard, it should be noted that consonant clusters in SF may never be simplified in TF, as it is demanded by the well-formedness constraint *COMPLEXO(nset). This is because if a consonant cluster appears in the peninitial syllable of SF, dispensing of any of the members of the cluster would result in a violation of I-CONTIGUITY (see 56c-d).

\[(56) \text{ANCHOR(SF-TF)L, I-CONTIGUITY} \gg \text{NOCODA, } \text{*COMPLEXO} \gg \text{MAX(SF-TF)}\]

<table>
<thead>
<tr>
<th>SF:</th>
<th>de.pre.(sjón)</th>
<th>ANC(SF-TF)L</th>
<th>I-CONT</th>
<th>NOCODA</th>
<th>*COMPO</th>
<th>Max(SF-TF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>(dé.pres)</td>
<td>*(</td>
<td></td>
<td>*</td>
<td>jón</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>(dé.pre)</td>
<td>*(</td>
<td></td>
<td></td>
<td>sjon</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>(dé.pe)</td>
<td>r</td>
<td></td>
<td></td>
<td></td>
<td>r sjon</td>
</tr>
<tr>
<td>d.</td>
<td>(dé.re)</td>
<td>p</td>
<td></td>
<td></td>
<td></td>
<td>p sjon</td>
</tr>
<tr>
<td>SF:</td>
<td>pro.tek.(θjón)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a'.</td>
<td>(pró.tek)</td>
<td>*(</td>
<td></td>
<td>*</td>
<td>θjon</td>
<td></td>
</tr>
<tr>
<td>b'.</td>
<td>(pró.te)</td>
<td>*(</td>
<td></td>
<td></td>
<td>kθjon</td>
<td></td>
</tr>
<tr>
<td>c'.</td>
<td>(pó.te)</td>
<td>*(</td>
<td></td>
<td></td>
<td>r kθjon</td>
<td></td>
</tr>
<tr>
<td>d'.</td>
<td>(ró.te)</td>
<td>*(</td>
<td></td>
<td></td>
<td>p kθjon</td>
<td></td>
</tr>
</tbody>
</table>

On the other hand, if the cluster appears in the initial syllable of SF, the option of dispensing of the word-initial consonant is precluded by the need to satisfy top-ranking ANCHOR(SF-TF)L (see 56d'). The alternative of deleting the second element of the cluster would result in the skipping of a segment (56c'). In other words, the constraint *COMPLEXO is neutralized by ANCHOR(SF-TF)L and I-CONTIGUITY in all contexts.
The following constraint hierarchy accounts for all the facts exhibited by Type-A Truncated Forms.

(57) **Constraint hierarchy responsible for Type-A Truncated Forms:**

4.2.2 **A constraint-based account of Type-B truncated forms**

A few other constraints are active in the selection of the optimal Type-B Truncated Form. Unlike Type-A, the formation of Type-B Truncated Forms is sensitive to the prosodic structure of SF. Specifically, the head of the PWd. Related to this issue is the proposal made in Alderete (1995) to interpret the tendency to avoid stress assignment on epenthetic vowels as a type of input-dependence that involves prosodic heads.

(58) **HEAD-DEP:** *Dependence on the Head of Prosodic Constituents*

Every segment contained in a prosodic head in S₂ must have a correspondent in S₁.

If $\beta$ is contained in a prosodic head in S₂, then $\beta \in \text{Range}(\mathcal{R})$. 
Here, I propose to account for Type-B Truncated Forms through the counterpart of HEAD-DEP. That is, HEAD-MAX(imization). As illustrated by the data in (59) below, there is a tendency for Truncated Forms of Type-B to preserve those segments that are contained in the head of the PWd of SF.

(59)  

a. Ultimately-stressed SF's:

<table>
<thead>
<tr>
<th>SF</th>
<th>TF</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>xo.a.(kín)]PWd</td>
<td>(kí.no)]PWd</td>
<td>Joaquín</td>
</tr>
<tr>
<td>ba.len.(tin)]PWd</td>
<td>(tí.no)]PWd</td>
<td>Valentín</td>
</tr>
<tr>
<td>i.sa.(bé)]PWd</td>
<td>(bé.la)]PWd</td>
<td>Isabelá</td>
</tr>
<tr>
<td>i.(nés)]PWd</td>
<td>(né.ca)]PWd</td>
<td>Inés</td>
</tr>
</tbody>
</table>

b. Penultimately-stressed SF's:

<table>
<thead>
<tr>
<th>SF</th>
<th>TF</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>do.(ló.res)]PWd</td>
<td>(ló.la)]PWd</td>
<td>Dolores</td>
</tr>
<tr>
<td>an.(sél.mo)]PWd</td>
<td>(cél.mo)]PWd</td>
<td>Anselmo</td>
</tr>
<tr>
<td>sil.(bé.s tre)]PWd</td>
<td>(bé.cé)]PWd</td>
<td>Silvestre</td>
</tr>
<tr>
<td>bi.(sén.te)]PWd</td>
<td>(cén.te)]PWd</td>
<td>Vicente</td>
</tr>
</tbody>
</table>

c. Antepenultimately-stressed SF's:

<table>
<thead>
<tr>
<th>SF</th>
<th>TF</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>(kán.di).ða]PWd</td>
<td>(kán.da)]PWd</td>
<td>Cándida</td>
</tr>
<tr>
<td>kri.(sós.to).mo]PWd</td>
<td>(cós.to)]PWd</td>
<td>Crisóstomo</td>
</tr>
<tr>
<td>(lá.sa).ro]PWd</td>
<td>(lá.čo)]PWd</td>
<td>Lázaro</td>
</tr>
<tr>
<td>a.ris.(tób.βu).lo]PWd</td>
<td>(tób.βo)]PWd</td>
<td>Aristóbulo</td>
</tr>
</tbody>
</table>

These data reveal a strong drive to preserve those elements in the head of the PWd. Prosodic-head maximization is accomplished when output string S₂ provides a correspondent for every segment contained in a prosodic head of input string S₁. I proceed to define HEAD-MAX as follows.

(60) HEAD-MAX: Maximize the Head of Prosodic Constituents

Every segment contained in a prosodic head in S₁ must have a correspondent in S₂.
The specific version of HEAD-MAX that is at play in Type-B Truncated Forms is HEAD(PWd)MAX, which demands that every segment parsed under the head of the PWd of SF must have a correspondent in TF. But clearly, HEAD(PWd)MAX is not perfectly obeyed in Type-B Truncated Forms. Some of the segments in the main-stressed foot of SF lack a correspondent in TF. Specifically, the second element of a complex onset is deleted (e.g. [(tán.čo)] < [(trán.si).to] 'Tránsito'), the high vocoid of a diphthong is lost (e.g. [(tén.ča)] < [or.(tén.sja)] 'Hortensia') and most coda consonants disappear (e.g. [(bé.to)] < [um.(bér.to)] 'Humberto'). These are the conspicuous effects of the well-formedness constraints *COMPLEXO(nset), *COMPLEXN(ucleus) and CODACOND(ition), redefined for Type-B truncated forms as follows.

(61) *COMPLEXO:  
No Complex Onsets  
Syllabic onsets do not branch.

(62) *COMPLEXN:  
No Complex Nuclei  
Syllabic nuclei do not branch.

(63) *CODACOND:  
Coda Condition  
No place features in the coda.

Because the PWd-Restrictor constraints dominate MAX(SF-TF), the optimal TF must be a candidate that reduces to a MinWd. Additionally, because HEAD(PWd)MAX dominates the PWd-Restrictor constraints, the segments to be parsed under the MinWd must be the correspondents of the segments contained in the head of the PWd of SF. However, given that the well-formedness constraints *COMPLEXO, *COMPLEXN and CODACOND dominate HEAD(PWd)MAX, the optimal TF may not always have a
correspondent for every single segment contained in the main-stressed foot of SF. The effects of this ranking are illustrated in the following tableau where, for reasons of space, the well-formedness constraints *COMPLEXO, *COMPLEXN and CODACOND are subsumed under SYLL-WELL.

(64) \[
\text{SYLL-WELL} \gg \text{HEAD(PWd)MAX} \gg \text{PRC} \gg \text{MAX(SF-TF)}
\]

<table>
<thead>
<tr>
<th>SF:</th>
<th>SYLL-WELL</th>
<th>HEAD(PWd)MAX</th>
<th>PRC</th>
<th>MAX(SF-TF)</th>
</tr>
</thead>
</table>
| a. 
[[úM.be]] |            | rto !         |     |            |
| b. 
[[úM.ber]] | * !       | to            |     |            |
| c. 
[uM.(bér.to)] | * !       |               |     |            |
| d. 
[(bér.to)] | * !       |               |     | um         |
| e. 
[(bé.to)]  | r         |               |     | um r       |

Candidates (64b,c and d) are ruled out by CODACOND, a member of SYLL-WELL, because they all have the segment /r/ parsed as a syllable coda. Since /r/ contains a place feature (e.g. [coronal]), each one of these candidates violates the constraint CODACOND once. The rivalry between the two surviving candidates, (64a) and (64e), is settled by HEAD(PWd)MAX. This constraint favors candidate (64e) for it manages to preserve a greater number of segments of those contained in the head of the PWd of SF.

It should be noted that even though candidate (64a) contains a coda consonant, it does not fall in violation of CODACOND. This is because the segment /M/ does not have a place feature of its own. Instead, it is parasitic on the place feature of the following consonant, as illustrated in the following representation.
(65)

\[
\begin{array}{cccc}
\text{u} & \text{M} & \text{b} & \text{e} \\
\text{V-place} & \text{C-place} & \text{V-place} \\
\text{[dorsal]} & \text{[labial]} & \text{[coronal]} \\
\end{array}
\]

This explains why the first syllable of the optimal TF may be closed by a nasal. Due to their property of giving up their own place features and becoming parasitic on the place feature of a following consonant, nasals are able to pass undetected by the scanning of CODACOND. However, for this to be possible, the nasal must be parsed under a word-internal coda because only there it would be followed by another consonant to share place features with. In tableau (66) below, candidate (66c) is optimal because it is able to preserve all segments in the main-stressed foot of SF without incurring any violations of SYLL-WELL. Candidates (66a) and (66b) are discarded by SYLL-WELL because they fall in violation of CODACOND. (66b) violates CODACOND twice because both /r/ and /n/ are segments specified for place. (The capital letter stands for a nasal consonant that is phonologically placeless and \(pl\) signals the presence of place features in the coda)

(66) SYLL-WELL >> HEAD(PWd)MAX >> PRC >> MAX(SF-TF)

<table>
<thead>
<tr>
<th>SF: [ar.(miN.da)]</th>
<th>SYLL-WELL</th>
<th>HEAD(PWd)MAX</th>
<th>PRC</th>
<th>MAX(SF-TF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [a r. (m iN .d a)]</td>
<td>*!</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. [(á r. m ín)]</td>
<td>* ! *</td>
<td></td>
<td>da</td>
<td></td>
</tr>
<tr>
<td>c. [m íN . d a)]</td>
<td></td>
<td></td>
<td>ar</td>
<td></td>
</tr>
</tbody>
</table>
Note that when a nasal ends up in word-final position, it retains its place feature. Nasals must rely on their own place of articulation when deprived of the support of a following consonant. This explains why the second syllable of TF may never be closed. Word-finally, not even nasals may pass undetected by CODACOND because in that position they have their own place feature just like all other segments.

But nasals are not the only consonants that undergo place assimilation in Spanish. When parsed as a coda, the lateral [l] also acquires the place feature of a following consonant. It becomes dental when preceding the dental stops /t, d/ (e.g. [al.to] < /alto/ 'tall', [al.dea] < /aldea/ 'village') or palatal when it precedes the palatal affricate [ɾ] (e.g. [ko.çon] < /kolçon/ 'mattress'). Place sharing has been proposed to account for the spirantization anomaly involving the sequence /ld/. The voiced stops /d, g/ spirantize when they follow /l/ (e.g. [kál.βo] < /kalbo/ 'bald', [sál.γo] < /salgo/ 'I leave'), whereas /d/ remains unchanged in the same context (e.g. [fál.da] < /falda/ 'skirt'). Following Steriada (1982), Harris (1984) redefines Guerssel's (1978) Adjacency Identity Constraint in autosegmental terms. He proposes a universal convention that I paraphrase as follows. Given a phonological representation REP where \( x \) and \( y \) are segments linked at some autosegmental tier, a process \( P \) may only affect \( x \) or \( y \) if both \( x \) and \( y \) satisfy the structural description of \( P \). This convention precludes the spirantization of /d/ when preceded by /l/ given that /l/ is not a voiced obstruent and spirantization only applies to voiced obstruents. Even though /d/ is a voiced obstruent, spirantization may not apply to /d/ alone because /d/ is linked to /l/ at the place node.
The relevant point of this discussion is that place sharing should enable /l/ to pass undetected by CODACOND. Consequently, the segment /l/ should be retained when it is parsed as the coda of the first syllable of the main-stressed foot of SF and followed by a homorganic consonant. The data in (66b) reveal that, in such context, /l/ is in fact preserved. However, a change in its structural role comes about.

(67)

<table>
<thead>
<tr>
<th>SF</th>
<th>TF</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [an.(sél.mo)]pwd</td>
<td>[(čé.mo)]pwd</td>
</tr>
<tr>
<td>[Fo.(sál.βa)]pwd</td>
<td>[(čá.βa)]pwd</td>
</tr>
<tr>
<td>[(sil.βja)]pwd</td>
<td>[(čí.βa)]pwd</td>
</tr>
<tr>
<td>[(tél.mo)]pwd</td>
<td>[(té.mo)]pwd</td>
</tr>
<tr>
<td>[(ól.γa)]</td>
<td>[(kó.ka)]pwd</td>
</tr>
<tr>
<td></td>
<td>Anselmo</td>
</tr>
<tr>
<td></td>
<td>Rosalba</td>
</tr>
<tr>
<td></td>
<td>Silvia</td>
</tr>
<tr>
<td></td>
<td>Telmo</td>
</tr>
<tr>
<td></td>
<td>Olga</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SF</th>
<th>TF</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. [gi.le.(bál.do)]pwd</td>
<td>[(bá.lo)]pwd</td>
</tr>
<tr>
<td>[gri.(sél.βa)]pwd</td>
<td>[(čé.la)]pwd</td>
</tr>
<tr>
<td>[i.(mél.βa)]pwd</td>
<td>[(mé.la)]pwd</td>
</tr>
<tr>
<td>[leo.(pól.βa)]pwd</td>
<td>[(pó.lo)]pwd</td>
</tr>
<tr>
<td></td>
<td>Guilebaldo</td>
</tr>
<tr>
<td></td>
<td>Griselda</td>
</tr>
<tr>
<td></td>
<td>Imelda</td>
</tr>
<tr>
<td></td>
<td>Leopoldo</td>
</tr>
</tbody>
</table>

The truncated forms in (67a) confirm that CODACOND is active. It forces the deletion of /l/ whenever the lateral precedes a non-homorganic segment. I found quite a number of Spanish names where /l/ is followed by a labial consonant within the main-stressed foot, however, I could only find one example where /l/ is followed by a velar consonant in such context (e.g. [(kó.ka)] < [(ól.ga)] 'Olga'). In any case, this example corroborates the claim that /l/ deletes when preceding a non-homorganic segment whether it is a labial or a velar. The data in (67a)) also indicate that the constraint ST-ROLE, which requires the identity in syllabic roles between SF and TF correspondents, is active as well. ST-ROLE is responsible for ruling out candidates such
as *[čá.la] and *[té.lo] (see 68a and 68a'), which assign a different syllabic role to the offending coda segment. According to this, St-ROLE dominates NoCODA and, as established above, NoCODA along with the rest of the SYLL-WELL constraints dominates MAX(SF-TF, seg).

(68) \text{St-ROLE} \gg \text{NoCODA} \gg \text{MAX(SF-TF, seg)}

<table>
<thead>
<tr>
<th>SF: \text{r.o.(sál.βa)]}_\text{PWD}</th>
<th>St-ROLE</th>
<th>NoCODA</th>
<th>MAX(SF-TF, seg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. \text{[(čá.la)]}_\text{PWD}</td>
<td>* !</td>
<td></td>
<td>\text{\bar{o} \beta}</td>
</tr>
<tr>
<td>b. \text{[(čá.βa)]}_\text{PWD}</td>
<td></td>
<td>* !</td>
<td>\text{\bar{o}}</td>
</tr>
<tr>
<td>c. \text{[(čá.βa)]}_\text{PWD}</td>
<td></td>
<td></td>
<td>\text{\bar{o} l}</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SF: \text{[(tél.mo)]}_\text{PWD}</th>
<th>St-ROLE</th>
<th>NoCODA</th>
<th>MAX(SF-TF, seg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a'. \text{[(té.lo)]}_\text{PWD}</td>
<td>* !</td>
<td></td>
<td>\text{m}</td>
</tr>
<tr>
<td>b'. \text{[(tél.mo)]}_\text{PWD}</td>
<td></td>
<td>* !</td>
<td>\text{}</td>
</tr>
<tr>
<td>c'. \text{[(té.mo)]}_\text{PWD}</td>
<td></td>
<td></td>
<td>\text{l}</td>
</tr>
</tbody>
</table>

What is surprising of the data in (65) above is that /d/, a segment that is not in violation of any of the syllable well-formedness constraints, is deleted whereas /l/, the segment that challenges CODACOND, is preserved (see 68b). It appears that in addition to CODACOND there is a ban on the sequence /ld/ that favors the sonorant segment over the obstruent one. The following constraints participate in this conflict.
(69) \[ *\text{LD}: \quad \text{The sequence} \ /ld/ \ \text{is disallowed} \]

(70) \[ \text{PARSE-l:} \quad \text{Parse the segment} \ /l/ \]

(71) \[ \text{PARSE-d:} \quad \text{Parse the segment} \ /d/ \]

PARSE-l must dominate *LD to ensure the preservation of /l/. Given that /d/ is the segment dropped to avoid the disallowed sequence, *LD must dominate PARSE-d. *LD and PARSE-l must also outrank St-ROLE since the lateral segment is preserved even if this involves a change in its structural role.

(72) \[ \text{PARSE-l} \gg *\text{LD} \gg \text{PARSE-d, St-ROLE} \]

<table>
<thead>
<tr>
<th>SF:</th>
<th>PARSE-l</th>
<th>*LD</th>
<th>PARSE-d</th>
<th>St-ROLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. [gi.le.(bál,do)]PWD</td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. [(bál,do)]PWD</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. (\not\in) [(bá,lo)]PWD</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

Except for these special cases, CODACOND is able to bar the correspondents of all other segments that close any syllable contained in the head of the PWd of SF. In tableau (73) below, candidates (73a-c) are ruled out by SYLL-WELL. Since /r/ and /s/ bear place features of their own, these candidates are penalized by CODACOND. The optimal TF is a minimally-marked structure that features a MinWd built on two CV-syllables (73d). The cost of this unmarkedness is the lack of a greater number of correspondents; that is, a greater degree of unfaithfulness of TF with respect to SF.
These data confirm that the constraint ST-ROLE is active. It must outrank SYLL-WELL given that, except for [l.d] sequences, syllable markedness may not be resolved through change in syllabic roles. Consider a candidate such as *[né.co]*, where /ć/ stands as the correspondent of /s/ in TF [er.(nés.to)]. Even though candidate (74c) complies with SYLL-WELL, it does so by parsing the correspondent of a coda segment as an onset, which constitutes a violation of ST-ROLE. The optimal TF must not only avoid marked syllable structure but it must also preserve segments that maintain the structural roles of their sf-correspondents (74c).
When the two members of a consonant cluster play the same structural role in SF (e.g. both are onset segments), SYLL-WELL, specifically *COMPLEXO, forces the deletion of one of them. The following examples illustrate this case.

\[(75)\] 
\[
\begin{array}{lll}
\text{[a.le.xan.(dri.na)]}_{\text{PWD}} & \text{[(dí.na)]}_{\text{PWD}} & \text{Alejandrina} \\
\text{[a.le.(xán.dro)]}_{\text{PWD}} & \text{[(xán.do)]}_{\text{PWD}} & \text{Alejandro} \\
\text{[am.(bró.sjo)]}_{\text{PWD}} & \text{[(bó.≠o)]}_{\text{PWD}} & \text{Ambrosio} \\
\text{[en.(grá.sja)]}_{\text{PWD}} & \text{[(gá.ča)]}_{\text{PWD}} & \text{Engracia} \\
\text{[lu.(kré.sja)]}_{\text{PWD}} & \text{[(ké.ča)]}_{\text{PWD}} & \text{Lucrecia} \\
\text{[pa.(tri.sja)]}_{\text{PWD}} & \text{[(ti.ča)]}_{\text{PWD}} & \text{Patricia} \\
\text{[t(rán.si).to]}_{\text{PWD}} & \text{[(tán.čo)]}_{\text{PWD}} & \text{Tránsito} \\
\end{array}
\]

The fact that the leftmost segment within the syllable is favored suggests that there is a syllable left-ANCHORing constraint, which must outrank *COMPLEXO to ensure that the first of two onset segments is retained (see tableau 77).

\[(76)\] 

ANCHOR(σ)L:  

\textit{Anchor Syllables Left} 

A segment sitting at the left periphery of an SF-syllable has a correspondent at the left periphery of a TF-syllable.

ANCHOR(σ)L is outranked only by PARSE-l and *LD. This ranking accounts for the fact that the hetorsyllabic sequence [l.d] is simplified by dropping /d/ and preserving the coda segment as a syllable onset (77c'). Tableau (77) below shows that although simplex onsets are enforced, they may not be obtained by omitting the first member of an onset cluster in SF. Candidate (77c) is discarded by ANCHOR(σ)L because it overlooks this condition.
Like codas and onsets, diphthongs are also simplified to satisfy $\text{SYLL-WELL}$, specifically $\text{*COMPLEXNUCLEUS}$. The following data show that, if the main-stressed foot of $\text{SF}$ contains a syllable with a diphthong, the less sonorous of the two vocoids does not have a correspondent in $\text{TF}$.

(78) $\begin{align*}
\text{SF:} & \quad [\text{a.de.(láj.da)}]_{\text{PWD}} & \quad [\text{bá.la}]_{\text{PWD}} & \quad \text{Adelaida} \\
& \quad [\text{bráw.ljo}]_{\text{PWD}} & \quad [\text{bá.lo}]_{\text{PWD}} & \quad \text{Braulio} \\
& \quad [\text{ka.(sjá.no)}]_{\text{PWD}} & \quad [\text{čá.no}]_{\text{PWD}} & \quad \text{Casiano} \\
& \quad [\text{fáw.ta}]_{\text{PWD}} & \quad [\text{fá.ta}]_{\text{PWD}} & \quad \text{Fausta} \\
& \quad [\text{fe.li.(sjá.no)}]_{\text{PWD}} & \quad [\text{ča.no}]_{\text{PWD}} & \quad \text{Feliciano} \\
& \quad [\text{sój.la}]_{\text{PWD}} & \quad [\text{čó.la}]_{\text{PWD}} & \quad \text{Zoila}
\end{align*}$

Note that deletion of the more sonorous vocoid of a diphthong would entail a change in structural roles: a non-peak vocoid would become the syllable peak. The fact that complex nuclei may not be simplified through a change in structural roles confirms that $\text{ST-ROLE}$ dominates $\text{SYLL-WELL}$. 

(77) $\text{PARSE-I} \gg \text{*LD} \gg \text{ANCHOR}(\sigma)\text{L} \gg \text{SYLL-WELL}$

<table>
<thead>
<tr>
<th>SF:</th>
<th>$[\text{a.le.xan.(drí.na)}]_{\text{PWD}}$</th>
<th>PARSE-I</th>
<th>*LD</th>
<th>ANCHOR(σ)L</th>
<th>SYLL-WELL</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>$[(\text{drí.na})]_{\text{PWD}}$</td>
<td></td>
<td></td>
<td></td>
<td>* !</td>
</tr>
<tr>
<td>b. $\emptyset$</td>
<td>$[(\text{di.na})]_{\text{PWD}}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>$[(\text{ři.na})]_{\text{PWD}}$</td>
<td></td>
<td></td>
<td>* !</td>
<td></td>
</tr>
<tr>
<td>SF:</td>
<td>$[\text{gri.(sél.da)}]_{\text{PWD}}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a'.</td>
<td>$[(\text{čél.da})]_{\text{PWD}}$</td>
<td></td>
<td>* !</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b'. $\emptyset$</td>
<td>$[(\text{čě.da})]_{\text{PWD}}$</td>
<td>* !</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c'. $\emptyset$</td>
<td>$[(\text{čě.la})]_{\text{PWD}}$</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>
Candidates (79a-c) run afoul of SYLL-WELL because they all incur violations of *COMPLEXNUCLEUS (candidate 79a. is also in violation of *COMPLEXONSET). The forms in (79e,d) opt for simplifying the complex nuclei in their attempt to comply with SYLL-WELL but they are discarded by ST-ROLE because they preserve segments with different syllabic roles. Candidate (79d) is the optimal TF because it does away with all syllable markedness without changing the syllabic roles of any segments.

This strong tendency to avoid all marked syllable structure is typical of Type-B truncated forms. It constitutes a major distinction between Type-A and Type-B hypocoristics. Whereas in Type-A, the skipping of internal segments is strongly disfavored, this is a well-accepted alternative to obtain syllable unmarkedness in Type-B truncated forms. This indicates that, whereas in Type-A the constraint I-CONTIGUITY dominates the set of constraints SYLL-WELL, in Type-B, it is SYLL-WELL that dominates I-CONTIGUITY.
When dominated by SYLL-WELL, the constraint I-CONTIGUITY is unable to neutralize any of the well-formedness constraints. The generalization is that in Type-B truncated forms, syllable well-formedness takes priority over (SF-TF)-Faithfulness. The high rank of SYLL-WELL is the reason why the MinWd tends to be erected on two CV-syllables that yield the templatic [(CV.CV)] form.

Another way in which (SF-TF)-Faithfulness is affected has to do with featural correspondence. Notice that some of the segments in the main-stressed foot of SF have a TF-correspondent that is not featurally identical (e.g. [(≠i.la)] < [er.(sí.lja)] 'Ercilia'). In Type-B hypocoristics, there is a strong tendency to avoid certain segments. Most frequently, it is /s, f, x, r/ that have an unfaithful correspondent in TF.
c. \( x \rightarrow k^4 \)

[eu.(xé.nja)] \( \rightarrow \) [ké.ña] Eugenia
[(xór.xe)] \( \rightarrow \) [(kó.ke)] Jorge
[re.(fú.xjo)] \( \rightarrow \) [(kú.ko)] Refugio
[bir.(xí.njo)] \( \rightarrow \) [(ki.ño)] Virginio

d. \( r \rightarrow l \)

[aw.(ré.ljo)] \( \rightarrow \) [(lé.lo)] Aurelio
[aw.(ró.ra)] \( \rightarrow \) [(ló.la)] Aurora
[el.(bí.ra)] \( \rightarrow \) [(bí.la)] Elvira
[si.(rí.lo)] \( \rightarrow \) [(lí.lo)] Cirilo

These data reveal that the segments /s, f, x, r/ are strongly disfavored. The fricatives /s, f, x/ turn into the stops /#, p, k/, respectively (81a-c) and the vibrant /r/ changes into the lateral /l/ (81d). According to the following universal sonority scale, all of these changes represent a decrease in sonority.

(81) Universal Sonority Scale: (Based on Jespersen, 1904)

<table>
<thead>
<tr>
<th>Obstruents</th>
<th>Nasals</th>
<th>Lateral s</th>
<th>r-sounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>p, t, k, č</td>
<td>f, s, x</td>
<td>b, d, g, j</td>
<td>v, z, ñ</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

|   |

(82) a. Sonority decrease:

\[
\begin{align*}
\text{s} & \rightarrow \text{č} \\
\text{f} & \rightarrow \text{p} \\
\text{x} & \rightarrow \text{k} \\
\text{r} & \rightarrow \text{l}
\end{align*}
\]

Sonority 2 \( \rightarrow \) Sonority 1
Sonority 7 \( \rightarrow \) Sonority 6

\(^4\) Although there are not many examples, there is also a tendency for the voiced stop /g/ to become /k/ (e.g. koka < olga 'Olga (a girl's name)').
In order to account for this tendency of /s, f, x, r/ to become less sonorous, I resort to the principle of Sonority Dispersion (Clements 1990b). This principle arises from the observation that, within the syllable, sonority disperses from the syllable peak onto the margins. As a consequence of this, each syllable constitutes a sonority cycle, which consists of an initial and a final demisyllables. Typically, the initial demisyllable rises in sonority, whereas the final demisyllable exhibits a sonority decline. The Dispersion Principle captures this generalization according to the values of dispersion, D.5

(83) Dispersion Principle: (Clements, 1990b: 304)
   a. The preferred initial demisyllable minimizes D.
   b. The preferred final demisyllable maximizes D.

Minimizing D, requires non-peak segments to be low in sonority, which results in a sharp and steady sonority rise in the initial demisyllable. Conversely, maximizing D, requires non-peak segments to be high in sonority, which yields a gradual sonority drop in the final demisyllable.

It is clear that the Dispersion Principle is satisfied by all the members of the set \{/sV/, /fV/, /xV/, /rV/\}. However, notice that each syllable of the set \{/čV/, /pV/, /kV/, /jV/\} has a lower dispersion value because the non-peak segments of their initial

---

5 The exact value of D is calculated according to the following equation.

\[
D = \sum_{i=1}^{m} \frac{1}{d_{i}^{2}}
\]

where \(d\) is the distance in sonority rank between each \(i\)th pair of segments in the demisyllable (including all non-adjacent pairs); and \(m\) is the number of pairs in the demisyllable, equal to \(n(n-1)/2\), where \(n\) is the number of segments.

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demisyllables are less sonorous. Since sonority dispersion in the initial demisyllable is to be minimized, the sonority profile of the syllables in \{/čV/, /pV/, /kV/, /ǰV/\} is better than that of the syllables in \{/sV/, /fV/, /xV/, /rV/\}. In order to capture this tendency to prefer syllables with a better sonority profile, I propose the constraint (N-O)SONDIST, which favors a sharp sonority contrast between the peak and the left syllable margin.

\[(84)\] (N-O)SONDIST: \textit{Nucleus-Onset Sonority Distance}

Maximize the sonority distance between the nucleus of a syllable and its onset.

Given that the change of /s, f, x, r/ into /č, p, k, ĵ/ promotes a sharper nucleus-onset contrast to the detriment of featural identity, the constraint (N-O)SONDIST must dominate the correspondence constraint IDENT(SF-TF). For the purposes here, I will assume that all vowels have sonority 8, although it is well-known that vowels have different sonority values, which depend mainly on their degree of aperture.

\[(85)\] (N-O)SONDIST $\gg$ IDENT(SF-TF)

\[
\begin{array}{|c|c|c|}
\hline
\text{SF:} & \[(xór.xe)\] & (N-O)SONDIST & IDENT(SF-TF) \\
\hline
\text{a.} & (xó)_{σ1}(xe)_{σ2} & σ_1 = 6 \neq σ_2 = 6 & \text{continuant} \\
\text{b.} & (kó)_{σ1}(ke)_{σ2} & σ_1 = 7 = σ_2 = 7 & \text{continuant} \\
\hline
\end{array}
\]

According to the universal sonority scale, the sonority distance between /x/ and /V/ is 6, whereas /k/ and /V/ are separated by 7 sonority levels. Even though candidate (85b) incurs two violations of IDENT(SF-TF), it is selected as optimal because the sonority distance between the segments that it parses in the peak and non-peak positions (e.g. /kV/) of its two syllables is greater than the distance that separates the onset and nucleus.
(e.g. /xV/) of the two syllables of candidate (85a). But not all of the IDENT(SF-TF) constraints are dominated. If they were, one would expect all consonants in the main-stressed foot of SF to have less sonorous segments as their TF-correspondents, and this is certainly not the case. My claim is that the segments /s, f, x, r/ in SF may have less sonorous correspondents in TF because the specific versions of IDENT(SF-TF) that are dominated by (N-O)SONDIST are IDENT(SF-TF, continuant) and IDENT(SF-TF, place), however, the rest of IDENT(SF-TF) constraints outrank (N-O)SONDIST. By ruling out all cases of extreme unfaithfulness, this ranking ensures that correspondent elements will be minimally dissimilar. For instance, a segment such as /f/ may not have /≠/ as its TF-correspondent because, even though such change would maximize the sonority distance between onset and nucleus, it would also entail violating some undominated versions of IDENT(SF-TF). Tableau (86) illustrates the interaction of (N-O)SONDIST with IDENT(SF-TF) constraints.

(86)  IDENT(SF-TF, nas, voice, strid., etc) >> (N-O)SONDIST >> IDENT(SF-TF, cont, pl)

<table>
<thead>
<tr>
<th>SF:</th>
<th>IDENT(SF-TF, nasal, voice, strident, etc.)</th>
<th>(N-O)SONDIST</th>
<th>IDENT(SF-TF, continuant, place)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (či)σ1(na)σ2</td>
<td>{strident} !</td>
<td>σ1 = 7  σ2 = 3</td>
<td>{place} {continuant}</td>
</tr>
<tr>
<td>b. (ki)σ1(na)σ2</td>
<td></td>
<td>σ1 = 7  σ2 = 3</td>
<td>{place} ! {continuant}</td>
</tr>
<tr>
<td>c. piσ1(na)σ2</td>
<td></td>
<td>σ1 = 7  σ2 = 3</td>
<td>{continuant}</td>
</tr>
<tr>
<td>d. (fi)σ1(da)σ2</td>
<td>{nasal} ! {sonorant}</td>
<td>σ1 = 6  σ2 = 5</td>
<td></td>
</tr>
<tr>
<td>e. (fi)σ1(≠a)σ2</td>
<td>{nasal} ! {strident} {sonorant}</td>
<td>σ1 = 6  σ2 = 7</td>
<td>{place}</td>
</tr>
</tbody>
</table>
Candidates (86b) and (86c) are the only ones that do not fall in violation of the general IDENT(SF-TF) constraint, which is able to secure a certain degree of featural identity by dominating (N-O)SONDIST. These two finalist tie with respect to the constraint (N-O)SONDIST since the sonority dispersion of the two initial demisyllables is the same for both (86b) and (86c). Bottom-ranking IDENT(SF-TF, continuant, place) settles the rivalry by favoring (86c) over (86b). Even though, both candidates incur one violation of IDENT(SF-TF, continuant) and neither of them preserves the exact place of the SF-correspondent, (86c) remains more faithful because it violates IDENT(SF-TF, place) only partially (e.g. \{labial\}, the main place feature is preserved), whereas (86b) blatantly violates this constraint.

The puzzling fact that /s/ becomes /≠/ rather than /t/ also follows from this constraint ranking, as illustrated by the following tableau.

(87) \[\text{IDENT(SF-TF, nas, voice, strid., etc)} \gg (N-O)\text{SONDIST} \gg \text{IDENT(SF-TF, cont, pl)}\]

<table>
<thead>
<tr>
<th>SF:</th>
<th>[se.(sí.lja)]</th>
<th>IDENT(SF-TF, nasal, voice, strident, etc.)</th>
<th>(N-O)SONDIST</th>
<th>IDENT(SF-TF, continuant, place)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>(\sigma )</td>
<td>(\neq i)<em>{\sigma_1(la)}</em>{\sigma_2})</td>
<td>(\sigma_1 = 7) (\sigma_2 = 2)</td>
<td>{continuant}</td>
</tr>
<tr>
<td>b.</td>
<td>(\pi)<em>{\sigma_1(la)}</em>{\sigma_2})</td>
<td>{strident} !</td>
<td>(\sigma_1 = 7) (\sigma_2 = 2)</td>
<td>{place} {continuant}</td>
</tr>
<tr>
<td>c.</td>
<td>(t)<em>{\sigma_1(la)}</em>{\sigma_2})</td>
<td>{strident} !</td>
<td>(\sigma_1 = 7) (\sigma_2 = 2)</td>
<td>{continuant}</td>
</tr>
<tr>
<td>d.</td>
<td>(b)<em>{\sigma_1(la)}</em>{\sigma_2})</td>
<td>{strident} ! {voice}</td>
<td>(\sigma_1 = 5) (\sigma_2 = 2)</td>
<td>{place} {continuant}</td>
</tr>
</tbody>
</table>
Given that the change /s/ → /c/ only affects the features \{continuant\} and partially, the feature \{place\} (e.g. \{coronal\}, the main place feature is preserved), candidate (87a) scores better than any other candidate because it remains faithful to all of the undominated features while maximizing the sonority distance between onset and nucleus. Since Spanish does not have a phoneme less sonorous than /≠/ that preserves the features \{voice\} and \{strident\} (e.g. /ts/), no other Spanish sound could be a better substitute for /s/. Even though /t/ has the same place of articulation as /s/ and it incurs a single violation of IDENT(SF-TF, continuant, place), it is not chosen as the optimal substitute for /s/ because it fails to preserve the feature \{strident\}.

Under the condition that IDENT(SF-TF, continuant, place) is the only IDENT(SF-TF) constraint that may be violated, the vibrant /r/ is better replaced by the lateral /l/ than by any other Spanish segment. This is illustrated by the following tableau.

\[
\begin{array}{|c|c|c|c|}
\hline
\text{SF:} & \text{IDENT(SF-TF, nasal, voice, strident, etc.)} & \text{(N-O)SONDIST} & \text{IDENT(SF-TF, continuant, place)} \\
\hline
\text{a.} & \text{[aw.(ró.ra)]} & \sigma_1 = 2, \sigma_2 = 2 & \{\text{continuant}\} \\
& (ló)_{\sigma_1}(lα)_{\sigma_2} & & \{\text{continuant}\} \\
\hline
\text{b.} & \text{\{nasal\} !} & \sigma_1 = 3, \sigma_2 = 3 & \{\text{continuant}\} \\
& (nó)_{\sigma_1}(na)_{\sigma_2} & & \{\text{continuant}\} \\
\hline
\text{c.} & \text{\{approximant\} !} & \sigma_1 = 5, \sigma_2 = 5 & \{\text{continuant}\} \\
& (dó)_{\sigma_1}(da)_{\sigma_2} & & \{\text{continuant}\} \\
\hline
\end{array}
\]

Although replacing /r/ by /n/ or /d/ would further extend the sonority distance between onset and nucleus (88b-c), such move would result in unfaithfulness to features
other than \{continuant\}, which is a fatal failure under the ranking IDENT(SF-TF, nas, voice, strid., etc) \(\gg\) (N-O)SONDIST \(\gg\) IDENT(SF-TF, cont, pl). In sum, this account of sound substitutions relies on feature faithfulness and universal sonority considerations to explain these otherwise unexplainable changes.

Nevertheless, there are also some sound substitutions that seem to be unpredictable considering that there is no apparent phonological principle responsible for them. The following data are representative.

\[(89)\]  

a. \(d \rightarrow l\)

\[
\begin{align*}
[a.\delta.e.\text{(lá.} \delta a)] & \quad [l.\text{á.}la]) & \quad \text{Adelaida} \\
[i.\text{(si.} \delta \text{ro})] & \quad [c.\text{í.}lo]) & \quad \text{Isidro} \\
e.\text{(} \delta wá.r.\delta o) & \quad [(l.\text{á.}lo]) & \quad \text{Eduardo}
\end{align*}
\]

b. \(r \rightarrow \tilde{j}\)

\[
\begin{align*}
e.\delta.e.l.\text{(mi.} \text{ra})] & \quad [(m.i.} \text{ja})] & \quad \text{Edelmira} \\
[(\text{f}l.\text{o.} \text{ra})] & \quad [(p.} \text{ó.} \text{ja})] & \quad \text{Flora} \\
t.e.o.\text{(} \delta \text{o.} \text{ra}) & \quad [(t.} \text{o.} \tilde{j} \text{a})] & \quad \text{Teodora}
\end{align*}
\]

g. \(d \rightarrow \tilde{j}\)

\[
\begin{align*}
[al.(f.\text{ré.} \delta o)] & \quad [(p.} \text{é.} \tilde{j} \text{a})] & \quad \text{Alfredo} \\
e.\text{(} \delta wá.r.\delta o) & \quad [(j.} \text{á.} \tilde{j} \text{a})] & \quad \text{Eduardo} \\
[ber.\text{(ná.} \delta o)] & \quad [(n.} \tilde{j} \text{a})] & \quad \text{Bernardo}
\end{align*}
\]

Contrary to extending the sonority distance between onset and nucleus, the substitutions that replace /d/ by /l/ or /\tilde{j}/ reduce it because both /l/ and /\tilde{j}/ have higher sonority than /d/. In the case of \(r \rightarrow \tilde{j}\), there is an increase in sonority distance given that
/ ʃ/ is less sonorous than /r/, however, features other than \{continuant\} and \{place\} are being affected (e.g. \{approximant\}, \{strident\}).

(90) a. **Sonority decrease:**

\[ \begin{align*}
    r & \rightarrow ʃ & \text{Sonority 7} & \rightarrow & \text{Sonority 4}
\end{align*} \]

b. **Sonority increase:**

\[ \begin{align*}
    d & \rightarrow ʃ & \text{Sonority 3} & \rightarrow & \text{Sonority 4}
\end{align*} \]

\[ \begin{align*}
    d & \rightarrow l & \text{Sonority 3} & \rightarrow & \text{Sonority 6}
\end{align*} \]

Other than observing a high resistance to be faithful to the segment /d/, possibly connected with the fact that /l/ is the segment maintained when there is an /ld/ sequence in the main-stressed foot of SF, I currently have no explanation to offer in order to account for such changes. The issue is left for future research.

In addition to the sound substitutions discussed above, there is also a process of palatalization that affects the coronal consonants /r, l, d, t, n/ when followed by a yod.

(91) a. sj → ʃ

\[ \begin{align*}
    [\text{a.ta.(ná.sjo)}] & \rightarrow [\text{(ná.čo)}] & \text{Atanasio} \\
    [\text{gra.(sié.la)}] & \rightarrow [\text{(čé.la)}] & \text{Graciela} \\
    [\text{kle.(mén.sja)}] & \rightarrow [\text{(mén.ča)}] & \text{Clemencia}
\end{align*} \]

b. rj → ʃ

\[ \begin{align*}
    [\text{be.li.(sá.rjo)}] & \rightarrow [\text{(čá.ʃo)}] & \text{Belisario} \\
    [\text{bik.(tó.rja)}] & \rightarrow [\text{(tó.ʃa)}] & \text{Victoria} \\
    [\text{(gló.rja)}] & \rightarrow [\text{(gó.ʃa)}] & \text{Gloria}
\end{align*} \]
Based on the observation that the feature [-anterior] of the high vocoid is preserved in the TF-correspondent of the consonant that precedes it, I propose to analyze this set of data as a case of fusion. According to this, a sequence of two segments in SF (e.g. /sj/, /rj/, /lj/, /dj/, /tj/, /nj/) may share a single segment (e.g. /c/, /j/, /n/) as their TF-correspondent. In other words, a many-to-one correspondence relationship between SF and TF segments is possible. This type of relationship is sanctioned by the correspondence constraint UNIFORMITY (McCarthy and Prince, 1995).

(92) UNIFORMITY: No element of S₂ has multiple correspondents in S₁.
For x, y ∈ S₁ and z ∈ S₁, if x \( R \) z and y \( R \) z, then x = y
By violating **Uniformity**, the optimal TF manages to save the correspondent of a segment that would normally be barred by *Complex Nucleus* (e.g. /j/). This suggests that the constraint **Parse-j**, which specifically requires the preservation of the segment /j/, dominates **Uniformity**. Under this ranking, the optimal candidate is also able to avoid violations of the constraints **Head(PWd)Max** and **I-Contiguity** while still respecting *Complex Nucleus*. This move, however, comes at the cost of violating **Ident(SF-TF)**, since the TF-segment that acts as correspondent for two segments in SF is not identical to any of them. (e.g. [č] < [sj], [č] < [tj], [ɟ] < [rj], [ɟ] < [lj], [ɟ] < [dj], [ń] < [nj]). Therefore, both **Ident(SF-TF)** and **Uniformity** are dominated by **Parse-j**. (Segments with multiple correspondents in SF appear underlined in the tableau below)

(93) **Syll-Well >> Parse-j >> Ident(SF-TF), Uniformity**

<table>
<thead>
<tr>
<th>SF:</th>
<th>[an.(tó.njo)]</th>
<th>Syll-Well</th>
<th>Parse-j</th>
<th>Ident(SF-TF)</th>
<th>Uniformity</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[(tó.njo)]</td>
<td>* !</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>[(tó.no)]</td>
<td>* !</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>[(tó.ño)]</td>
<td></td>
<td></td>
<td>{ń/n,j}</td>
<td>ų</td>
</tr>
</tbody>
</table>

Candidate (93a) is ruled by **Syll-Well** because it runs afoul of *Complex Nucleus*. Candidates (93b) and (93c) illustrate two ways to comply with *Complex Nucleus*. (93b) opts for dropping the offending segment whereas (93c) finds a harmonic solution that reconciles the two antagonistic constraints. By fusing the segments /nj/, (93c) is able to provide a correspondent for /j/, as required by **Parse-j**, and simplify the diphthong, as demanded by **Syll-Well**. It should be pointed out that a candidate such as [(tó.ni)], which provides a correspondent for /j/ but with a different
sylabic role, is already out of competition by the time it gets to this segment of the constraint ranking since it was already established that ST-ROLE dominates SYLL-WELL. All these same arguments also apply to the rest of cases of fusion as illustrated below.

(94) SYLL-WELL >> PARSE-j >> IDENT(SF-TF), UNIFORMITY

<table>
<thead>
<tr>
<th>SF:</th>
<th>[a.ta.(ná.sjo)]</th>
<th>SYLL-WELL</th>
<th>PARSE-j</th>
<th>IDENT(SF-TF)</th>
<th>UNIFORMITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[(ná.sjo)]</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[(ná.so)]</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[(ná.čo)]</td>
<td></td>
<td></td>
<td>{≠/s,j}</td>
<td>≠</td>
</tr>
<tr>
<td>SF:</td>
<td>[bik.(tó.rja)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[(tó.rja)]</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[(tó.ra)]</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[(tó.ţa)]</td>
<td></td>
<td></td>
<td>{ţ/rţ}</td>
<td>ţ</td>
</tr>
<tr>
<td>SF:</td>
<td>[a.(má.lja)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[(má.lja)]</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[(má.la)]</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[(má.ţa)]</td>
<td></td>
<td></td>
<td>{j/lţ}</td>
<td>ţ</td>
</tr>
<tr>
<td>SF:</td>
<td>[(san.(tjá.yo)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[(tjá.yo)]</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[(tá.yo)]</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[(ţá.yo)]</td>
<td></td>
<td></td>
<td>{≠/tţ}</td>
<td>≠</td>
</tr>
</tbody>
</table>

Note that if fusion did not occur, there would be no reason why the segments /r, l, n, d, t, s/ should become palatalized. This change takes place only because the features of /j/ fuse with the features of the preceding consonant. However, these sound substitutions that accompany the formation of Type-B truncated forms are not always
regular. There are examples where instead of palatalization the option is to delete the glide (e.g. číla < sesílja Cecilia, lílo < bawdíljo Baudilio, lálo < bráwljo Braulio). This less frequent solution would suggest unspecified ranking between the constraints PARSE-j and UNIFORMITY. When the latter takes precedence over the former, fusion is not a viable option and the diphthong is simplified through deletion.

\[(95) \text{SYLL-WELL, UNIFORMITY >> PARSE-j}\]

<table>
<thead>
<tr>
<th>SF</th>
<th>[se.(slja)]</th>
<th>SYLL-WELL</th>
<th>UNIFORMITY</th>
<th>PARSE-j</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[čí.lja]</td>
<td>* !</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>[čí.ja]</td>
<td></td>
<td>j !</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>[čí.la]</td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

This concludes my proposal to account for Type-B Truncated Forms that originate from a penultimately-stressed source form. When SF is prosodically-marked (e.g. ultimately or ante-penultimately-stressed), a few more issues arise. The following sub-sections deal with those special groups of Type-B truncated forms.

4.2.2.1 Type-B TF's from ante-penultimately-stressed SF’s

When SF is ante-penultimately-stressed, the optimal TF is selected according to the same constraint ranking established above. The sole difference is that this group of data reveals one more fact about the process that generates Type-B Truncated Forms. This new fact is that ANCHORING is also active, but its effect is not obvious when SF is a word that bears penultimate stress. The data in (96) illustrate this point.
(96) **Ante-penultimately-stressed SF's:**

|-----------|--------------------|--------------------|--------------------|

Here, where the main-stressed foot of SF is not word-final, it is quite clear that in addition to preserving those segments parsed under the head of the PWd, there is also a strong tendency to preserve the segment sitting at the right periphery of SF. This suggests that ANCHOR(SF-TF)R is active and that it must dominate HEAD(PWd)Max since it is better to keep a correspondent for the rightmost segment in SF than one for the rightmost segment in the main-stressed foot when these are two different segments. Accordingly, the optimal form is one that does not sacrifice ANCHORing over prosodic-head maximization (97b).

(97) **ANCHOR(SF-TF)R >> HEAD(PWd)Max**

|-----------|--------------------|--------------------|--------------------|

When the main-stressed foot of SF is word-final (e.g. penultimately-stressed words), ANCHOR(SF-TF)R and HEAD(PWd)Max do not come into conflict because they both require the preservation of the rightmost segment in SF. This is the reason why ANCHOR(SF-TF)R does not seem to be relevant for paroxytonic SF's.
(98) \textbf{ANCHOR(sf-tf)$R >> \text{HEAD(PWd)}$Max}

<table>
<thead>
<tr>
<th>SF:</th>
<th>ANCHOR(sf-tf)$R$</th>
<th>HEAD(PWd)$\text{Max}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[≠á. ʃo)]</td>
<td></td>
</tr>
</tbody>
</table>

Lipski (1995) groups together the examples presented in (99) below. I analyze these data as a case where \textbf{ANCHOR(sf-tf)L} is active as well.

(99) \textbf{TF's with Left-Anchoring:}

\[
\begin{array}{ccc}
\text{[ful.(xen.sjo)]} & \text{[(fèn.ʃo)]} & \text{Fulgencio} \\
\text{[fe.ðe.(rí.ko)]} & \text{[(fí.ko)]} & \text{Federiko} \\
\text{[flo.(rí.da)]} & \text{[(fin.da)]} & \text{Florinda} \\
\text{[xe.(rár.ðø)]} & \text{[(xá.ðø)]} & \text{Gerardo} \\
\text{[ma.(rí.na)]} & \text{[(mí.na)]} & \text{Marina} \\
\text{[ro.(ðrí.ʃø)]} & \text{[(rí.ʃø)]} & \text{Rodrigo} \\
\end{array}
\]

In this case, the word-initial segment wins over the foot-initial one. This indicates that \textbf{ANCHOR(sf-tf)L} dominates \text{HEAD(PWd)}\text{Max} so that the segment sitting at the left periphery of \textit{sf} may take priority over the one sitting at the left periphery of the main-stressed foot. Tableau (100) below illustrates the effect of this alternative ranking with the example [[(fèn.ʃo)]].

(100) \textbf{ANCHOR(sf-tf)$L >> \text{HEAD(PWd)}$Max}

<table>
<thead>
<tr>
<th>SF:</th>
<th>ANCHOR(sf-tf)$L$</th>
<th>HEAD(PWd)$\text{Max}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[xe.n.ʃø)]</td>
<td>* !</td>
</tr>
<tr>
<td>b. \textsuperscript{\text{əp}}</td>
<td>[(fèn.ʃo)]</td>
<td>x</td>
</tr>
</tbody>
</table>

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4.2.2.2 Type-B TF's from ultimately-stressed SF's

The data from this group reveal that yet other correspondence constraints may be violated in the formation of Type-B Truncated Forms.

<table>
<thead>
<tr>
<th>Ultimately-stressed SF's</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[moj.(sés)]</td>
<td>[čé.če]</td>
</tr>
<tr>
<td>[be.a.(trís)]</td>
<td>[bí.če]</td>
</tr>
<tr>
<td>[xo.a.(kín)]</td>
<td>[kí.no]</td>
</tr>
<tr>
<td>[ba.len.(tín)]</td>
<td>[tí.no]</td>
</tr>
<tr>
<td>[xe.(sús)]</td>
<td>[čú.čo]</td>
</tr>
<tr>
<td>[se.βas.(tján)]</td>
<td>[čá.no]</td>
</tr>
<tr>
<td>[i.sa.(βél)]</td>
<td>[bé.la]</td>
</tr>
<tr>
<td>[(krús)]</td>
<td>[kú.ča]</td>
</tr>
<tr>
<td>[i.(nés)]</td>
<td>[né.ča]</td>
</tr>
<tr>
<td>[pu.ri.fi.ka.(sjón)]</td>
<td>[čó.na]</td>
</tr>
</tbody>
</table>

Here, a segment that is not present in the main-stressed foot, nor in the rest of the segmental string of SF, appears at the right periphery of TF. This segment may be /a/, /o/ or /e/, which are precisely the three most common word-markers in Spanish, and which also serve to realize the gender morpheme: -a 'feminine', -o 'masculine, -e 'masculine/feminine'. Considering that -a is consistently added to the hypocoristic of a feminine name and that -o is consistently added to the hypocoristic of a masculine name, it seems rather unreasonable to treat these segments as epenthetic. Instead, I propose to analyze each instance of these meaningful units as a morpheme whose right edge is required to close the Morphological Word (92). Note that if these segments were epenthetic one would not expect /o/ or /a/ but /e/ constantly since this is the unmarked
vowel of the language. I claim that ALIGN(MWd)R is the constraint responsible for the
domination of word-markers.

(102) ALIGN(MWd)R:  \textit{Align Morphological Word Right}

Align (MWd, R, WM, R)  
Align the right edge of the Morphological Word with the
right edge of a Word Marker.

ALIGN(MWd)R requires Spanish words to be closed by a terminal element or
terminal Word Marker. The selection of -a or -o as the appropriate WM is phonologically
unpredictable. It seems to depend on a semantic feature that the TF inherits from the
source form. WM is precisely the morphological category that serves to flesh out this
semantic feature. ALIGN(MWd)R comes into conflict with ANCHOR(SF-TF)R because the
word-marker sits exactly at the right periphery of TF (e.g. [(cé. če)], [(ki.no)], [(bě.la)].
Since the conflict is resolved to the detriment of ANCHOR(SF-TF)R, ALIGN(MWd)R must
be the dominant constraint. Tableau (103) below illustrates this constraint conflict.

(103) ALIGN(MWd)R >> ANCHOR(SF-TF)R

<table>
<thead>
<tr>
<th>SF:</th>
<th>[xo.a.(kín)]</th>
<th>ALIGN(MWd)</th>
<th>ANCHOR(SF-TF)R</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[(kín)]</td>
<td>* !</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[(kí.no)]</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>SF:</td>
<td>[i.(nés)]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[(néč)]</td>
<td>* !</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[(né.ča)]</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>SF:</td>
<td>[moj.(sés)]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[(céč)]</td>
<td>* !</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[(cé.če)]</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>
It should be pointed out that the addition of a word-marker is also favored by the PWd-Restrictor constraints and SYLL-WELL. The additional vowel provided by the word-marker allows TF to satisfy FT-BIN. It also enables TF to simplify the marked syllable structure contained in the main-stressed foot of SF by transferring the coda consonant to the onset of the new syllable.

(104) PRC, SYLL-WELL, ALIGN(MWd)R >> ANCHOR(SF-TF)R

<table>
<thead>
<tr>
<th>SF:</th>
<th>[xe.(sús)]</th>
<th>PRC</th>
<th>SYLL-WELL</th>
<th>ALIGN(MWd)</th>
<th>ANCHOR(SF-TF)R</th>
</tr>
</thead>
<tbody>
<tr>
<td>([cú č])</td>
<td>* !</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>([cú.čo])</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Finally, when the main-stressed foot of SF corresponds to a single open syllable (e.g. [(≠é.o)] < [xo.(sé)] José), the addition of the word-marker is not needed to simplify syllable structure but its presence is still required byALIGN(MWd)R and PRC. Tableau (95) below illustrates this case.

(105) PRC, SYLL-WELL, ALIGN(MWd)R >> ANCHOR(SF-TF)R

<table>
<thead>
<tr>
<th>SF:</th>
<th>[xo.(sé)]</th>
<th>PRC</th>
<th>SYLL-WELL</th>
<th>ALIGN(MWd)</th>
<th>ANCHOR(SF-TF)R</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[(če)]</td>
<td>* !</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>[(če.o)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.2.2.3 Contrastive Type-A and Type-B properties

I conclude this analysis with some comments on the correlation between the properties of the two truncation processes. I argued that these are two independent
processes based on the fact that, even though they have some properties in common, some constraints that are strongly enforced in one process are totally ignored in the other. The following are the main contrastive properties between the two processes.

(106) **Correlation between Type-A and Type-B truncated forms:**

<table>
<thead>
<tr>
<th>TYPE-A</th>
<th>TYPE-B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sensitive to syllable structure</strong></td>
<td><strong>Sensitive to foot structure</strong></td>
</tr>
<tr>
<td>The segments preserved in TF come exclusively from the first two syllables of SF: compliance with ANCHOR(SF-TF)L.</td>
<td>The segments preserved in TF come mostly from the main-stressed foot of SF: Compliance with HEAD(PWd)MAX.</td>
</tr>
<tr>
<td>[al.(fón.so)] &gt; [(ál.fon)] Alfonso</td>
<td>[al.(fón.so)] &gt; [(fón.čo)] Alfonso</td>
</tr>
<tr>
<td><strong>More tolerance of syllable markedness</strong></td>
<td><strong>Less tolerance of syllable markedness</strong></td>
</tr>
<tr>
<td>Marked syllable structure may be simplified as long as it does not entail skipping any segments: I-CONTIGUITY &gt;&gt; SYLL-WELL.</td>
<td>Marked syllable structure must be simplified even if this entails skipping some segments: SYLL-WELL &gt;&gt; I-CONTIGUITY.</td>
</tr>
<tr>
<td>[ro.(dól.fo)] &gt; [(ró.do)] Rodolfo</td>
<td>[[ro.(dól.fo)] &gt; [(fó.fo)] Rodolfo</td>
</tr>
</tbody>
</table>
| *[(fól.fo)] | [
| **Higher Feature Faithfulness** | **Lower Feature Faithfulness** |
| A segment in SF and its TF-correspondent are featurally-identical: IDENT(SF-TF) is undominated. | A segment in SF and its TF-correspondent may be minimally dissimilar: IDENT(SF-TF) is dominated. |
| [bir.(Xí.njo)] > [(bír.Xi)] Virginio | [bir.(Xí.njo)] > [(ki.ňo)] Virginio |
| **One-to-one Correspondence** | **Two-to-one Correspondence** |
| A segment in TF must have a single correspondent in SF: UNIFORMITY is undominated. | A segment in TF may have multiple correspondents in SF: UNIFORMITY is dominated. |
| [djo.(ní.sjo)] > [(djó.ni)] Dionisio | [djo.(ní.sjo)] > [(ní.čo)] Dionisio |
**No word-markers**

TF is not required to be closed by a word-marker:

\[ \text{pru.}(\text{den.}\theta \text{ja}) > [(\text{pru.}\text{dén})] \]

Prudencia

---

**Word-markers**

TF is required to be closed by a word-marker:

\[ \text{pru.}(\text{den.}\text{sja}) > [(\text{čén.}\text{ča})] \]

Prudencia

Furthermore, since Type-A and Type-B hypocoristics occur in different dialects, one expects them to be part of different grammars. Type-A is representative of Peninsular Spanish whereas Type-B mostly occurs in Latin American dialects. Accordingly, many Spanish names have two different types of hypocoristics.

\[(107) \quad \begin{array}{llll} 
SF & \text{TYPE-A} & \text{TYPE-B} \\
((\text{xó.}\text{sé})] & [(\text{xó.}\text{se})] & [((\text{čé.})\text{o})] & \text{José} \\
[\text{do.}(\text{ló.}\text{res})] & [(\text{ló.}\text{lo})] & [(\text{ló.}\text{la})] & \text{Dolores} \\
[\text{be.a.}(\text{trís/}\theta)] & [(\text{bi.}\text{a})] & [(\text{bi.}\text{če})] & \text{Beatriz} \\
[\text{ix/X.}(\text{ná.}\text{s/}\theta\text{jo})] & [(\text{iX.na})] & [(\text{ná.}\text{čo})] & \text{Ignacio} \\
[\text{fer.}(\text{nán.}\text{do})] & [(\text{fér.}\text{na})] & [(\text{nán.}\text{do})] & \text{Fernando} \\
[\text{trán.si}.\text{to}] & [(\text{trán.}\text{si})] & [(\text{tán.}\text{čo})] & \text{Tránsito} \\
[\text{bi.}(\text{s/}\theta\text{én.}\text{te})] & [(\text{bi.}\theta\text{en})] & [(\text{čén.}\text{te})] & \text{Vicente} \\
\end{array} \]

This indicates that the selection of type is unpredictable. Ultimately, penultimately or antepenultimately-stressed words may form hypocoristics in either type. Words that take the terminal element /o/, /a/, /e/, /y/ or any other terminal element for that matter, may form hypocoristics in either type, as well. The selection of type appears then to be bound solely to the dialect and the grammar of that dialect.

Even though there exist cases where the truncated form is predetermined (e.g. *Pacho < Francisco, Pepe < José*) both processes are amply productive. As remarked by Lipski (1995, p. 390), 'the fact that innovative names can usually be adapted to existing
hypocoristic patterns indicates a degree of synchronic vigor, supplementing the recurring
diachronic processes which gave rise to the common core of Spanish hypocoristics.' He
goes on to point out how 'if Nacho is accepted as the hypocoristic for Atanasio, Ignacio,
Anastasio, etc., then an innovative name such as *Protanasio will also predictably take
Nacho. This productivity is also reflected in the treatment given to foreign names.
Although the corpus of data provided by Boyd-Bowman (1955) does not provide many
examples of this kind, there is evidence that foreign names are adapted to the
hypocoristic patterns as well (e.g. Guásho < Wáshington).

4.3 Summary

There are two well-defined truncation processes in Spanish. Both of them result
from universal prosodic constraints that limit the PWd to a MinWd. When the prosodic
constraints FT-BIN, PARSE-SYLL and ALL-Ft dominate MAX(SF-TF), the PWd may
contain no more and no less than a single binary foot. Consequently, if the source form
(SF) contains more segmental material than can be fit into the MinWd, the new output is a
truncated form (TF) that may not be identical to SF. In Type-A truncated forms, the
segments that are preserved in TF may only be the correspondents of segments that are
parsed under the first two syllables of SF. This is because ANCHOR(SF-TF)L and I-
CONTIGUITY are the only correspondence constraints that outrank the PWd-Restrictor
constraints. Even when there is room under the MinWd to parse a segment from the third
syllable of SF, this alternative is disfavored because ST-ROLE dominates MAX(SF-TF, seg).
However, not all of the segments from the first two syllables of SF may be preserved in
TF. The well-formedness constraints *COMPLEXN and CODACOND also dominate
MAX(SF-TF, seg) and they are able to prevent the preservation of diphthongs and non-
coronal coda consonants when the offending segments may not be spared by top-ranking
I-CONTIGUITY. In Type-B truncated forms, the segments that are preserved in TF are
mostly the correspondents of those segments parsed under the main-stressed foot of SF.
This is because the prosodic constraint HEAD(PWd)MAX outranks the PWd-Restrictor
constraints. However, not all of the segments parsed under the main-stressed foot of SF
may be preserved in TF because *COMPLEXO, *COMPLEXN and CODACOND outrank
HEAD(PWd)MAX and I-CONTIGUITY. This constraint ranking forces the deletion of the
second member of an onset cluster, the less sonorous segment of a diphthong and all coda
consonants but /N/ and /L/. The reason why /N/ and /L/ are exceptional is because they
undergo place assimilation, which enables them to pass undetected by CODACOND. The
constraint (N-O)SONDIST forces the correspondents of some onset segments in SF to
become less sonorous so that they are more harmonic with their syllabic role. The fact
that UNIFORMITY and some versions of IDENT(SF-TF) are dominated makes it possible for
two segments in SF to share a single correspondent is SF or for a segment in SF to have a
minimally dissimilar correspondent in TF. These two types of correspondence
relationships work to the detriment of (SF-TF)-Identity and impinge greatly on the
resemblance between SF and TF.
5.0 Introduction

Pharies (1986) uses the term 'playful vocabulary' to refer to lexical items whose meaning entails an attitude of levity or lightness applied to derogatory (1a) or positive concepts (1b) in order to express burlesque humor, lightheartedness, merriment or gait, among other connotations.¹

(1) a. Normal Playful b. Normal Playful

fool nincompoop candy yummies
gibberish mumbojumbo many jillions
homosexual queer quickly lickety-split
police pig small teeny-weeny

Playful words are a lexical field where he finds that meaning and form tend to converge. In his book dedicated to the Spanish Playful Lexicon, Pharies presents an extensive corpus of data that he organizes in terms of 'templates'. A template comprises of a group of playful words sharing prosodic and segmental properties, which yield a canonical form. Here, I study a template characterized by a dactyl that sits at the right periphery of the PWd (e.g. [ … (σ′σ)σ]_{PWD}. The examples in (2) are representative.

¹ Examples from Pharies (1986).
I propose to account for this change in prosodic structure through the prosodic constraint **NONFINALITY**, which outranks the correspondence constraint **DEP** forcing the insertion of an epenthetic syllable.

1. **Suffixation vs. epenthesis**

Playful Words (PW) that obey the dactylic template feature an epenthetic syllable at their right margin. The segments used to flesh out this new syllable are a liquid consonant, \( l \) or \( r \), and a vowel that is a copy of the rightmost vowel in SF.\(^2\)

<table>
<thead>
<tr>
<th>SF</th>
<th>PW</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \theta \text{án.}\theta a )</td>
<td>( \theta \text{án.}\theta a _la )</td>
<td>'swing'</td>
</tr>
<tr>
<td>( \text{tí.pi} )</td>
<td>( \text{tí.pi} _\text{li} )</td>
<td>'sound of a bouncing falling object'</td>
</tr>
<tr>
<td>( \text{kim.bám.bas} )</td>
<td>( \text{kim.bám.bas} _\text{ra} )</td>
<td>'a very distant place'</td>
</tr>
<tr>
<td>( \text{trín.kis} )</td>
<td>( \text{trín.ki} _\text{li} )</td>
<td>'a shot of wine or liquor'</td>
</tr>
</tbody>
</table>

Pharies (1986) analyzes these data as an instance of suffixation. To derive these forms, the suffix \( -LV_j \) is added to the stem through rule (4). \( L = \) liquid, \( V = \) vowel.

---

\(^2\) One major difficulty in the study of Spanish PW's is that it is not always possible to trace back their SF's. Frequently, Pharies can only speculate on forms that appear to be the input, but it is not certain that they are the actual forms that gave rise to the attested PW's. The trait that all PW's from this template have in common is that they always contain a sequence of a liquid consonant and a vowel appearing at the right margin of the word. Since the presence of this sequence can be confirmed in the output but not in the
But if -LVj were truly a suffix, it would be unlike any other Spanish morpheme. It is not an inflectional morpheme since it does not realize any grammatical function. It may not be a derivational morpheme either, because it does not effect any change of meaning or syntactic category in the source form. In actuality, -LVj is totally deprived of meaning and segmentally, it is only partially specified. If -LVj were posited as a morpheme, it would have at least ten allomorphs (e.g. la, le, li, lo, lu, ra, re, ri, ro, ru). The most revealing fact about the nature of -LVj is its distribution. It acts like a suffix whenever the corresponding SF ends in a vowel (θán.θa.la < θín.θa 'swing'), but when SF ends in a consonant, it acts like an infix, instead (e.g. trín.ki.lis < trín.kis 'a shot of wine'). Most interesting of all, the addition of -LVj always results in the formation of a dactyl where there was a simple trochee in SF (e.g. [... (s′σ)s]pwd < [... (s′σ)]pwd ). These facts suggest that rather than a morphemic unit, -LVj is an entity of a different sort. The following rime from the region of Burgos, Spain leaves no doubt that -LVj is not a morpheme but an epenthetic syllable deprived of meaning.

(5) Rime in normal Spanish:

En las montañas / de Cataluña, / en las murallas / frente al Ferrol,
hay un convento / de religiosas / que son facciosas / y yo no soy/
Yo tengo un duro / y un medio duro / y una peseta / para gastar. /
También un coche / con siete mulas ...
In the mountains of Catalonia, within the city walls next to Ferrol there is a convent of religious women, that are factious and I am not I have five pesetas / and two and a half pesetas / an one peseta / to spend I also have a car / with seven mules . . .

Rime in Playful Spanish:

En las montáñaras de Catalúña / en las murállaras / junto al Ferrol, /
hay un convéntoro / de religiósaras / que son facciósaras / y yo no soy /
Yo tengo un dúoro / y un medio dúoro / y una pesétara / para gastar
También un cóchere / con siete múlara . . .

Playful words have exactly the same meaning as their source forms. The obvious difference between SF and PW is the musicality added by a change in metrical structure (e.g. \[ \ldots (\sigma \sigma)_{\text{PWd}} < \ldots (\sigma')_{\text{PWd}} \]). When -$L\sigma_j$ is added, the trochaic rhythm of SF becomes dactylic (e.g. montáñaras < montañas 'mountains'). In this regard, it should be pointed out that the source forms of this template are always penultimately-stressed words (e.g. \[ \ldots (\sigma \sigma)_{\text{PWd}} \]). The fact that ultimately and antepenultimately-stressed words do not undergo this transformation indicates that the template has a specific target. Clearly, the aim of this process is to change paroxytone words into proparoxytones.

Here, I propose to analyze -$L\sigma_j$ as an epenthetic syllable arising from the need to meet a particular prosodic configuration. The addition of -$L\sigma_j$ serves the purpose of keeping the main-stressed foot from being word-final. To put it in a different way, -$L\sigma_j$ avoids that the right edge of the main-stressed foot matches the right edge of the PWd. Note from the representations in (6) below that the syllable projected by -$L\sigma_j$ remains unparsed from a foot and it is directly linked to the PWd.
(6) Change in prosodic structure from SF to PW:

\[
\begin{array}{c}
\text{PWd} \\
\downarrow \sigma \\
\downarrow \sigma \\
\downarrow \mu \\
\downarrow \mu \\
\Theta \quad \text{ân} \\
\end{array} \quad \rightarrow \quad \begin{array}{c}
\text{PWd} \\
\downarrow \sigma \\
\downarrow \sigma \\
\downarrow \mu \\
\downarrow \mu \\
\Theta \quad \text{ân} \quad \Theta \quad \text{a} \\
\end{array}
\]

This particular prosodic effect is captured by the constraint \textsc{NonFinality} proposed by Prince and Smolensky (1993) and redefined as misalignment below.

(7) \textsc{NonFinality}: Misalign(F, R, PWd, R)

The right edge of the main-stressed foot may not match the right edge of the PWd.

\textsc{NonFinality} must dominate the correspondence constraint that militates against syllable epenthesis. That is, \textsc{Dep}(SF-PW, \sigma). This ranking means that adding an epenthetic syllable is an affordable cost to avoid a word-final foot in PW (8b). Epenthesis of more than one syllable (8c,d), however, would give rise to unjustified violations of the faithfulness constraint \textsc{Dep}(SF-PW, \sigma).

(8) \textsc{NonFinality} >> \textsc{Dep}(SF-PW, \sigma)

<table>
<thead>
<tr>
<th>SF: \text{[...}(\sigma \sigma)\text{]}_{\text{PWd}}</th>
<th>\textsc{NonFinality}</th>
<th>\textsc{Dep}(SF-PW, \sigma)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. \text{[...}(\sigma \sigma)\text{]}_{\text{PWd}}</td>
<td>* !</td>
<td>* !</td>
</tr>
<tr>
<td>b. \text{[...}(\sigma \sigma)\sigma\text{]}_{\text{PWd}}</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>c. \text{[...}(\sigma \sigma)\sigma\sigma\text{]}_{\text{PWd}}</td>
<td>** !</td>
<td>** !</td>
</tr>
<tr>
<td>d. \text{[...}(\sigma \sigma)\sigma\sigma\sigma\text{]}_{\text{PWd}}</td>
<td>** !</td>
<td>*</td>
</tr>
</tbody>
</table>

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Furthermore, given that forming a monosyllabic foot (e.g. \([\sigma']\sigma\)_{PWd}) is not an alternative to avoid finality, the constraint FT-BIN must outrank NONFINALITY. On the other hand, NONFINALITY must dominate PARSESYLL because finality is prevented at the cost of leaving the epenthetic syllable unparsed. The effect of this ranking is illustrated in tableau (9) below. Candidate (9b) is ruled out by NONFINALITY because the right edge of its main-stressed foot matches the right edge of the PWd. Candidate (9a) tries to avoid a violation of NONFINALITY by shrinking the foot to a monosyllabic form. But this move is sanctioned both by PARSE-SYLL and top-ranking FT-BIN. In order to comply with FT-BIN and NONFINALITY, the optimal PW must incur a violation of PARSESYLL (9c), which results in the characteristic dactylic rhythm of these PW's.

(9) \( \text{FTBIN} \gg \text{NONFINALITY} \gg \text{PARSESYLL} \)

<table>
<thead>
<tr>
<th>SF: ([\sigma']\sigma)_{PWd}</th>
<th>FT-BIN</th>
<th>NONFINALITY</th>
<th>PARSESYLL</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ([\sigma']\sigma)_{PWd}</td>
<td>*!</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>b. ([\sigma']\sigma)_{PWd}</td>
<td></td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>c. ([\sigma']\sigma\sigma)_{PWd}</td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

When SF contains more than two syllables, NONFINALITY could be satisfied through the same strategy of shifting the foot back one syllable, but without incurring epenthesis. This, however, does not ever occur, seemingly because the main-stressed foot of PW would not be identical to the main-stressed foot of SF. In other words, the segments parsed under the main-stressed foot of PW must be the correspondents of those segments parsed under the main-stressed foot of SF (e.g. \([\text{gwa.}(\text{sán.g}a)\text{.ra}] < [\text{gwa.}(\text{sán.g}a)] 'fuss'\)). This suggests that identity between the prosodic heads of SF and
PW is highly enforced. I interpret this as a type of head-to-head dependence that may be captured through the prosodic constraint H-HDEP.

(10) H-HDEP: \(\textit{Head-to-head Dependence}\)

Every segment contained in the main-stressed foot of \(S_2\) must have a correspondent in the main-stressed foot of \(S_1\).

When H-HDEP dominates NONFINALITY, matching of the right edge of the main-stressed foot and the right edge of the PWd may not be avoided by altering the main-stressed foot (11b). However, because NONFINALITY dominates \(\text{Dep}(\text{SF-PW}, \sigma)\), finality may still be prevented through the addition of an epenthetic syllable that serves as cushion between the right edge of the main-stressed foot and the right edge of the PWd (11c).

(11) \(\text{H-HDEP} \gg \text{NONFINALITY} \gg \text{Dep}(\text{SF-PW}, \sigma)\)

<table>
<thead>
<tr>
<th>SF:</th>
<th>[gwa.(sán.ga)]\textsubscript{PWd}</th>
<th>H-HDEP</th>
<th>NONFINALITY</th>
<th>Dep(SF-PW, (\sigma))</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[gwa.(sán.ga)]\textsubscript{PWd}</td>
<td></td>
<td>* !</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>[(gwá.san).ga]\textsubscript{PWd}</td>
<td>g ! wa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. (\varphi)</td>
<td>[gwa.(sán.ga).LV]\textsubscript{PWd}</td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

The examples where SF ends in a consonant reveal that ANCHOR(SF-PW)R is enforced (e.g. \(\textit{kimbámbaras} < \textit{kimbambas}\) 'distant place'). That is, the segment sitting at the right periphery of SF must have a correspondent at the right periphery of PW. The following data illustrate this point.
(12) **Right-ANCHORing:**

<table>
<thead>
<tr>
<th>SF</th>
<th>ANCHOR(SF-PW)R</th>
<th>O-CONTIGUITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ([trîñ.ksi])</td>
<td>![trîñ.ki.ls]</td>
<td>![trîñ.ki.ls]</td>
</tr>
<tr>
<td>b. ([kîm.(bàm.bas)])</td>
<td>![kîm.(bàm.ba).ras]</td>
<td>![kîm.(bàm.ba).ras]</td>
</tr>
<tr>
<td>c. ([kàr.thèl])</td>
<td>![kàr.thèl]</td>
<td>![kàr.thèl]</td>
</tr>
<tr>
<td>d. ([fà.thèl])</td>
<td>![fà.thèl]</td>
<td>![fà.thèl]</td>
</tr>
<tr>
<td>e. ([mu.rà.jas])</td>
<td>![mu.rà.ja.ras]</td>
<td>![mu.rà.ja.ras]</td>
</tr>
</tbody>
</table>

Given that right-ANCHORing is achieved at the expense of separating the rightmost segment in $SF$ from its neighboring segments, it must be that ANCHOR(SF-PW)R dominates O-CONTIGUITY, the correspondence constraint that militates against intrusive elements. This leads to the conclusion that the need to satisfy ANCHOR(SF-PW)R is what causes -$LV_j$ to behave like an infix (see 13b and 13b').

(13) **ANCHOR(SF-PW)R >> O-CONTIGUITY**

<table>
<thead>
<tr>
<th>SF</th>
<th>ANCHOR(SF-PW)R</th>
<th>O-CONTIGUITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ![trîñ.ki.ls]</td>
<td>![trîñ.ki.ls]</td>
<td>![trîñ.ki.ls]</td>
</tr>
<tr>
<td>b. ![trîñ.ki.ls]</td>
<td>![trîñ.ki.ls]</td>
<td>![trîñ.ki.ls]</td>
</tr>
<tr>
<td>e. ![mu.rà.ja.ras]</td>
<td>![mu.rà.ja.ras]</td>
<td>![mu.rà.ja.ras]</td>
</tr>
</tbody>
</table>

It turns out then that $-LV_j$ is not always $-LV_j$. When $SF$ ends in a vowel, the sequence of new segments in $SF$ must have the order $-VL$ rather than $-LV$, so that the rightmost segment in $SF$ has its TF-correspondent at the rightmost point of TF (e.g. ![kon.(bén.tV).Lo] < ![kom.(bén.to)] 'convent'). According to this, the epenthetic syllable is always an infix. When $SF$ ends in a consonant, this fact is more evident, but given that all dactylic PW's are subject to the same constraint ranking, the correspondent of the
rightmost segment in SF must always sit at the rightmost point of TF regardless if SF ends in a vowel (14a) or a consonant (14a'). Only so may the undominated constraint \textsc{Anchor}(SF-PW)R be satisfied.

(14)  \textbf{Anchor(SF-PW)R} $\gg$ \textbf{O-Contiguity}

<table>
<thead>
<tr>
<th>SF:</th>
<th>[(kon.(bén.to)]_{PWd}</th>
<th>ANCHOR(SF-PW)R</th>
<th>O-CONTIGUITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. \small{\textgreater}</td>
<td>[(kon.(bén.t\text{V}.L).\text{Lo})]_{PWd}</td>
<td></td>
<td>LV</td>
</tr>
<tr>
<td>b. \small{\textgreater}</td>
<td>[(kon.(bén.to).L\text{V}]_{PWd}</td>
<td>* !</td>
<td></td>
</tr>
<tr>
<td>SF:</td>
<td>[re.li.(xjó.sas)]_{PWd}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a'.\small{\textgreater}</td>
<td>[re.li.(xjó.sa).L\text{Vs})]_{PWd}</td>
<td></td>
<td>LV</td>
</tr>
<tr>
<td>b'.\small{\textgreater}</td>
<td>[re.li.(xjó.sas).L\text{V}]_{PWd}</td>
<td>* !</td>
<td></td>
</tr>
</tbody>
</table>

The fact that the epenthetic syllable conforms to the unmarked CV-type suggests that the well-formedness constraints \textsc{Onset} and \textsc{Nucleus} are active. To satisfy \textsc{Onset} and \textsc{Nucleus}, the new syllable node must parse at least one consonant and one vowel. My account of these facts relies on the following correspondence constraints.

(15) \textbf{V-INTEGRITY:} 'No vowel-breaking'

No vowel of SF has multiple correspondents in TF. For $x \in SF$ and $w, z \in SF$ if $x \mathrel{\Re} w$ and $x \mathrel{\Re} z$, then $w = z$

(16) \textbf{C-INTEGRITY:} 'No consonant-breaking'

No consonant of SF has multiple correspondents in TF. For $x \in SF$ and $w, z \in SF$ if $x \mathrel{\Re} w$ and $x \mathrel{\Re} z$, then $w = z$

(17) \textbf{DEP(SF-PW, seg):} \textit{Segmental dependence on the source form.}

Every segment in PW has a correspondent in SF.
Given that the onset of the epenthetic syllable is inserted, rather than copied, $\text{DEP} (\text{SF-PW},\, \text{seg})$ must be dominated by $\text{ONSET}$ and $\text{C-INTEGRITY}$. On the other hand, the fact that the peak of the epenthetic syllable is a copy of the preceding vowel indicates that $\text{DEP} (\text{SF-PW},\, \text{seg})$ outranks $\text{NUCLEUS}$ and $\text{V-INTEGRITY}$.

(18) $\text{ONSET},\, \text{C-INTEGRITY} \gg \text{DEP} (\text{SF-PW},\, \text{seg}) \gg \text{NUCLEUS} \gg \text{V-INTEGRITY}$

<table>
<thead>
<tr>
<th>SF:</th>
<th>[kim.(bám.bas)]$_{\text{PWd}}$</th>
<th>ONSET</th>
<th>C-INTEG</th>
<th>DEP(SF-PW)</th>
<th>NUCLEUS</th>
<th>V-NTEG</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[kim.(bám.ba).as]$_{\text{PWd}}$</td>
<td>* !</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>b.</td>
<td>[kim.(bám.ba).bas]$_{\text{PWd}}$</td>
<td>* !</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>c.</td>
<td>[kim.(bám.ba).Lles]$_{\text{PWd}}$</td>
<td></td>
<td>* * !</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. (\text{\textsuperscript{a}})</td>
<td>[kim.(bám.ba).Las]$_{\text{PWd}}$</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>e.</td>
<td>[kim.(bám.ba).L_s]$_{\text{PWd}}$</td>
<td></td>
<td>*</td>
<td>* !</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Candidate (18a) runs afoul of top-ranking $\text{ONSET}$ because it fails to provide an onset for the epenthetic syllable. Candidate (18b) supplies an onset for the epenthetic syllable by copying the onset of the preceding syllable. This, however, represents a fatal violation of high-ranking $\text{C-INTEGRITY}$. Candidate (18c) receives two marks from $\text{DEP} (\text{SF-PW},\, \text{seg})$ because it inserts both the onset and the nucleus of the epenthetic syllable. Candidates (18e) ties with (18d) by inserting a single segment. However, the strategy (18e) pursues, results in an ill-formed syllable, whereas candidate (18d) satisfies the well-formedness constraints while minimizing the number of violations of $\text{DEP} (\text{SF-PW},\, \text{seg})$.

One of the most interesting facts about the dactylic template concerns the segment that fills the onset of the epenthetic syllable. Unlike Jerigonza, where the epenthetic consonant is always a voiceless stop, the onset of the epenthetic syllable of dactylic PW's
is not the most harmonic syllable margin at all. In the case of Jerigonza, the syllable-margin hierarchy applies perfectly because the epenthetic segment belongs to the natural class that occupies the lowest section of the hierarchy: the voiceless stops /p, t, k, ≠/. 

(19) Spanish Syllable-Margin Hierarchy:

\[
\begin{array}{cccccc}
&M/a,e,i,o,u & > & M/r & > & M/l & > & M/m,n,\bar{n} & > & M/f,s,\theta, \check{\j},x & > & M/b,d,g & > & M/p,t,k,\ne
\end{array}
\]

7  6  5  4  3  2  1

Since the only syllable-margin constraints that are dominated by ONSET are *M/p,t,k,≠/, it follows that no segment of sonority higher than 1 can be the onset of the epenthetic syllable. This type of approach, however, fails when applied to dactylic PW's. Claiming that the onset of the epenthetic syllable of PW's must be a liquid consonant because ONSET dominates the syllable-margin constraints *M/r/ and *M/l/ would entail not only that /r/ and /l/ may be parsed in that position but also that all other segments of sonority 6 and lower may be as well. But evidently, this is not the case.

The approach I used to explain the sound substitutions that take place in the formation of Type-B hypocoristics is unsatisfactory when applied to PW's. In Chapter 4, I proposed the constraint (N-O)SONDIST to account for a tendency displayed by a group of segments (e.g. /s, f, x, r/) to decrease their sonority when parsed as syllable onsets. In order to obtain a more salient sonority contrast between the syllable peak and the left syllable margin, these segments alter their specifications for the features {continuant} and {place}. Through this strategy, they become less sonorous and more harmonic with the syllabic role they play. But if an optimal sonority profile were being enforced in the formation of dactylic PW's, liquids would be the wrong segments to choose in order to fill
the onset of the epenthetic syllable because their high sonority value contrasts minimally with that of the syllable peak. \((N-O)\textit{SONDIST} \) actually predicts that liquids would be the worst possible choice for that purpose.

Why is it then that liquids are the segments selected to fill the onset of the epenthetic syllable of dactylic \(\textit{PW's} \)? The answer I offer for this question has to do with the prosodic context where the epenthetic syllable appears. I interpret the dactylic rhythm of \(\textit{PW} \) as three declining levels of prosodic prominence that start with the head of the foot. The prosodic configuration \([ \ldots (\sigma' \sigma)\sigma]_{\text{PWd}} \) translates into a \([ \ldots (3 \rightarrow 2) \rightarrow 1] \) downgrade at the right margin of the word. The head of the trochaic foot is the prosodic peak \((=3) \), the non-head syllable is a step down from it \((=2) \), and the syllable beyond the right margin of the foot constitutes the bottom end \((=1) \) of a declining line of prosodic prominence, which is sketched below.

\[
\begin{array}{c}
3 \\
\ast \\
\ast \\
(\sigma' \sigma) \sigma_{\text{PWd}}
\end{array}
\]

The point I want to make with this observation is that, in order to understand the relevance of parsing a liquid segment as the onset of the epenthetic syllable, one needs to look beyond syllable structure and take into account the entire prosodic context where the epenthetic syllable appears. My claim is that the segmental units parsed by the prosodic
constituents that participate in the prosodic prominence line in (20) reflect the
prominence decline of their parsers.

Pharies (1986: 30), describes the dactylic template as the skeletal string in (21),
which I complement with prosodic structure for clarity purposes. He points out that the
onset of the final syllable is always a liquid and that the onset of the two previous
syllables tends to be a voiceless stop or an affricate.

(20) **Dactylic template**: (Pharies 1986: 30)

```
     PWd
    /   \
   F   
  /   \ /
 σ    σ  σ
 / \   / /
C  V (C) C Vj L Vj
```

voiceless stop/affricate
liquid

According to this characterization of the segmental string of the template,
consonants of low sonority are the preferred syllable margin for the footed syllables,
whereas consonants of high sonority are the preferred syllable margin for the unfooted
syllable. What this reveals in terms of sonority dispersion is a tendency to decrease the
sonority distance between the syllable peak and the syllable margin which is directly
proportional to the decline in prosodic prominence displayed by the last three syllables of
pw. Put differently, the syllable that features the dullest sonority contrast corresponds to
the point of lowest prominence of the prosodic prominence line. To illustrate this point,
consider the playful-word *tígere* < *tigre* 'tiger', whose prosodic prominence line is sketched in (21). For convenience, I repeat the syllable-margin hierarchy and the sonority values of the different segment classes.

(21) **Sonority distance in proportion to prosodic prominence:**

\[
\begin{array}{ccccccc}
&M/a,e,i,o,u >> &M/r >> &M/l >> &M/m,n,ñ >> &M/f,s,θ, j,x >> &M/b,d,g >> &M/p,t,k, ≠ \\
\sigma &7 &6 &5 &4 &3 &2 &1
\end{array}
\]

By parsing a liquid as the onset of the epenthetic syllable, it is assured that the final syllable will have the slightest sonority contrast possible in accordance with its lower prosodic prominence. Note that by parsing obstruents as the onset of the footed syllables, the drop in sonority distance is enhanced, however, regardless the sonority distance between the onset and nucleus of previous syllables, the selection of a liquid as the epenthetic segment guarantees that the word will end with the lightest sonority contrast, just like it ends with the least prominent syllable.
When the onset segments of the syllables that are parsed by the main-stressed foot of SF are not obstruents, the drop in sonority distance is not as sharp. However, even in such cases, the insertion of a liquid assures that the sonority distance of the last syllable of the word will always be lower, or at least the same, as the sonority distance of any previous syllable. Such case is illustrated below with the pw *dúoro* < *duro* 'five pesetas'.

(22) **Sonority distance in proportion to prosodic prominence:**

\[
\begin{array}{cccccccc}
*M/a, e, i, o, u & >> & *M/r & >> & *M/l & >> & *M/m, n, ñ & >> & *M/f, s, θ, ʃ, x & >> & *M/b, d, g & >> & *M/p, t, k, \≠ \\
7 & 6 & 5 & 4 & 3 & 2 & 1 \\
\end{array}
\]

\[
\begin{array}{cccc}
\sigma & \sigma & \sigma_{\text{pwd}} \\
\uparrow & \uparrow & \uparrow \\
d & ú & r & o & r & o \\
\end{array}
\]

'five pesetas'

**Segmental sonority**

\[
\begin{array}{cccccccc}
2 & 7 & 6 & 7 & 6 & 7 \\
\end{array}
\]

**Sonority distance**

\[
\begin{array}{cccc}
5 & 1 & 1 \\
\end{array}
\]

I conclude that dactylic playful-words are another instance of prosodic morphology in Spanish. According to this account, the source form undergoes lengthening in order to meet a prosodic configuration, rather than as a result of a purely morphological operation. The selection of a liquid segment as the onset of the epenthetic syllable assures that the lightest sonority contrast will correspond to the least prominent
syllable of the template. The following is the constraint hierarchy that accounts for dactylic playful-words.

\[(23)\] Constraint Hierarchy responsible for dactylic PW's:

\[
\begin{array}{c}
\text{Ft-Bin} \\
\text{NonFinality} \\
\text{Parse-Syll} \\
\text{Dep}(\text{sf-pw}, \sigma) \\
\text{Nucleus} \\
\text{Dep}(\text{sf-pw}, \text{seg}) \\
\text{V-Integrity} \\
\end{array}
\]

\[
\begin{array}{c}
\text{H-HDep} \\
\text{O-Contiguity} \\
\text{Onset} \\
\text{Anchor(sf-pw)R} \\
\end{array}
\]

\[\]

5.2 Summary

In this chapter, I have focused on a type of Spanish playful-words that features a dactylic template. Regular penultimately-stressed words are changed into proparoxytones through the addition of an epenthetic syllable that is needed to comply with NonFinality, the prosodic constraint that militates against word-final feet. Although Dep(sf-pw) is dominated, the playful-word (PW) must maintain a high degree of resemblance with respect to its source form (SF). This is because of the high rank of Max(sf-pw) and the prosodic-dependence constraint H-HDep. The latter forces TF to project a main-stressed foot that is formed with the correspondents of the segments
parsed under the main-stressed foot of SF. Furthermore, \textsc{Anchor}(SF-PW) ensures that those segments that are peripheral SF have peripheral correspondents in TF. The epenthetic syllable node parses a consonant and a vowel in compliance with the well-formedness constraints \textsc{Onset} and \textsc{Nucleus}. The nucleus slot is filled in with a vowel that is a copy of an SF-segment because \textsc{V-integrity} is outranked by \textsc{Nucleus}. However, \textsc{Onset} dominates \textsc{Dep}(SF-PW, seg) and it is able to force the insertion of a new segment. I interpreted the selection of a liquid consonant as the optimal onset of the epenthetic syllable as an effect of the prosodic context: the least prominent syllable of the dactyl dominates segments with the lightest sonority contrast.
CHAPTER 6

CONCLUSIONS

Four alternative word-formation processes of Spanish have been explored in this dissertation. Jerigonza, blends, hypocoristics and playful words are processes related to one another through the fact that they are governed by prosodic constraints that condition the way in which morphemes are realized in the output. Three different alternatives to concatenative morphology have been revealed by this study.

(1) **Discontinuous morphemes:**

```
<table>
<thead>
<tr>
<th>Source Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>x₁ x₂ x₃ x₄</td>
</tr>
</tbody>
</table>
```

```
<table>
<thead>
<tr>
<th>New Output Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ x₁ x₂ X X x₄ X X ]</td>
</tr>
</tbody>
</table>
```

(2) **Overlapping morphemes:**

```
<table>
<thead>
<tr>
<th>Source Forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>x₁ x₂ x₃ x₄ y₁ y₂ y₃ y₄ y₅ y₆ y₇ y₈</td>
</tr>
</tbody>
</table>
```

```
<table>
<thead>
<tr>
<th>New Output Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ y₁ y₂ y₃ y₄ y₅ y₆ y₇ y₈ ]</td>
</tr>
</tbody>
</table>
```
(3) **Template-molded morphemes:**

**A. Template-driven shortening**

\[
\text{Source Form} \quad x_1 \ x_2 \ x_3 \ x_4 \ x_5 \ x_6 \ x_7 \ x_8
\]

\[
\text{New Output Form} \quad [ \ x_1 \ x_2 \ x_3 \ x_4 \ ]
\]

**B. Template-driven lengthening**

\[
\text{Source Form} \quad x_1 \ x_2 \ x_3 \ x_4
\]

\[
\text{New Output Form} \quad [ \ x_1 \ x_2 \ x_3 \ x_4 \ X \ X \ ]
\]

Discontinuous morphemes and template-driven lengthening are instances of what Bagemihl (1988) refers to as empty morphology. Empty morphemes are structural units that participate in the generation of words but do not have any meaning. The analyses of Jerigonza and playful-words developed in Chapter 2 and Chapter 5 respectively, reveal that empty morphemes are actually not morphemes but semantically void 'fillers' that appear in the new output form only to help meet a prosodic configuration. Form this standpoint, empty morphemes are not morphological entities per se but rather, morpho-phonological ones.

The study of blends in Chapter 3 found in this process additional evidence in support of Correspondence Theory. Specifically, a type of many-to-one correspondence...
relationship that allows two morphemes to occur simultaneously rather than sequentially, and which represents the most evident break from concatenative morphology. Additionally, it was found that many-to-one correspondence relationships may hold even when the multiple correspondents in the input are not identical to the single correspondent in the output. Although this type of correspondence is not as transparent as when the correspondents are identical, it contributes to maximize the input form and to satisfy alignment constraints.

The analysis of truncated forms presented in Chapter 4 confirmed that templates are defined in terms of prosodic units and that they originate from constraint interaction rather than from a single templatic constraint. Additional evidence in support of correspondence constraints that target prosodic heads was found in Type-B truncated forms, Jerigonza and dactylic playful words. In these processes, the head of a prosodic constituent acts as the domain of prosodic-head correspondence constraints. These type of constraints may require that a prosodic head in the input be maximized in the output or that a prosodic head in the output be dependent on a prosodic head in the input. Jerigonza also shows that the head of the foot, a stressed syllable, is used in infixing ludlings to make the correspondent of a syllable in the source form more salient than the 'filling' syllable that is added to complete a disyllabic foot.

The data from all four processes indicate that the new output form is generated from a derived output form as opposed to an abstract input form. Although very little evidence was found that the new output form retains derived allophonic properties of the source form, the high dependence on the prosodic structure of the source form constitutes robust evidence for output-to-output correspondence. Jerigonza and Type-A
hypocoristics are sensitive to the syllable structure of the source form. Type-B hypocoristics and playful-words are dependent on the main-stressed foot of the source form, and blends are bound to the domain defined by the edges of the prosodic word of the longer source form.

Additional support for the claim that nasal and lateral segments are placeless when they assimilate to a following consonant was found in the formation of hypocoristics where these segments are precisely the only ones in the language that can pass undetected by a CODACONDITION that bars place features from the right syllable margin. This is related to the general tendency in both types of truncation processes to simplify marked structure in favor of prosodic as well as segmental unmarkedness. Prosodically, the target is a minimal word consisting of a single binary foot that is erected on two unmarked CV-syllables. Segmentally, the aim is to select units that are more harmonic with the syllabic roles they play. According to this, segments of low sonority are the preferred syllable margins, whereas segments of high sonority are more harmonic syllable peaks. This results in a sharper sonority contrast between the syllable peak and the left syllable margin that decreases the sonority dispersion within the initial demisyllable.

Another type of prosodic unmarkedness was found in Jerigonza, where perfect compliance with the prosodic hierarchy enforced by the constraints PARSESYLLABLES, FOOTBINARITY and ALL-FEET- (Right) yields a prosodic structure where all syllables are footed, all feet are binary and each foot is as close to being final as possible.

A general preference for the syllabic trochee was found across all four non-concatenative processes, confirming that the unmarked Spanish foot is left-headed and
disyllabic rather than right-headed or bimoraic. JER-2 constitutes the only case in Spanish where iambic footing is uncontroversial. However, even this case of right-headedness within the foot is derivable from constraint interaction rather than as the result of a specific constraint requiring iambic footing, such as FOOT-FORM(Iambic).

From a segmental viewpoint, Jerigonza also confirms that Spanish Csc clusters are syllabified as C.s.C rather than C.s.C. In JER-1 and JER-3, where alignment of the left edge of the syllable with the left edge of a foot is required, words with Csc clusters are turned into Jerigonza words by placing the epenthetic syllable after the Cs sequence which splits the cluster as C.s.PV.C in JER-1 and as C.PVs.C in JER-3, so that alignment may be satisfied.

The selection of the optimal onset segment for the epenthetic syllables in Jerigonza was found to be dependent on universal sonority considerations according to which the least sonorous segments make the best syllable onsets. The natural class of voiceless stops is at the bottom of the syllable-margin hierarchy, which makes it less costly to parse them as syllable onsets.

On the other hand, the selection of the optimal onset segment for the epenthetic syllable of playful-words does not seem to obey any principle enforcing the parsing of low-sonority segments as syllable margins. Instead, it seems that the selection of a high-sonority segment as the optimal syllable margin is governed by the entire prosodic context where the epenthetic syllable appears. In this case, the fact that liquids are the consonants with the highest sonority makes their parsing more harmonic because they contrast minimally with the high sonority of the vowel that sits at the peak of the syllable. This dull sonority contrast within the syllable correlates with the less prominent role that
the epenthetic syllable plays in the prosodic prominence downgrade that characterizes the dactyl.

Finally, this study reveals that the morpho-phonological component of Spanish has two different levels. Traditional studies on Spanish word-formation have focused on level 1, which corresponds to the regular input-to-output derivations. With the incorporation of Optimality Theory, no intermediate stages are needed within level 1. However, a second level of derivation must be posited given that the source forms for processes like Jerigonza, blends, truncated forms and playful-words are derived output forms, which are the output of level 1. A marked difference between the two levels is a higher tolerance of non-concatenative operations in level 2, due to the higher rank of phonological and interface constraints.
APPENDIX

SPANISH BLENDS*

A. Left-Anchoring

1. ag arra
   agrarista
   ➢ agarrista
       ‘he grabs’
   agrarista
       ‘related to a farm’

2. beber
   comercio
   ➢ bebercio
       ‘drink’
   comercio
       ‘business’

3. burro
   bicicleta
   ➢ burricleta
       ‘donkey’
   bicicleta
       ‘bicycle’

4. burro
   burocracia
   ➢ burocracia
       ‘donkey’
   burocracia
       ‘bureaucracy’

5. caca
   cocaina
   ➢ cocaina
       ‘excrement’
   cocaina
       ‘cocaine’

---

* The sources of these data are Pharies (1987), Lang (1990) and my own personal records.
6. **comer**  
**comercio**  
- ‘eat’  
- ‘business’  
- **comercio**  
- ‘food business’

7. **cucu**  
**escuchar**  
- ‘cuckoo’  
- ‘listen’  
- **cucuchar**  
- ‘listen to a cuckoo’

8. **charla**  
**biblioteca**  
- ‘talk’  
- ‘library’  
- **charloteka**  
- ‘a library where people talk instead if studying or reading’

9. **dedo**  
**democracia**  
- ‘finger’  
- ‘democracy’  
- **dedocracia**  
- ‘an arbitrary system of election by pointing with the finger’

10. **diablo**  
**mariposa**  
- ‘devil’  
- ‘butterfly’  
- **diabliposa**  
- ‘an evil looking butterfly’

11. **fai**  
**fascista**  
- ‘Federación Anarquista Ibérica’  
- ‘fascist’  
- **faisista**  
- ‘a fascist FAI member’

12. **fai**  
**fallangista**  
- ‘Federación Anarquista Ibérica’  
- ‘Falangist’  
- **fallangista**  
- ‘a Failangist member of FAI’

13. **flaco**  
- ‘skinny’
jacome  ‘Jácome’

➢ flacome  ‘a nickname for a skinny guy whose last name was Jácome’

14. gris  ‘a member of the Policía Armada’
gestapo  ‘Gestapo’

➢ gristapo  ‘Policía Armada’

15. jeta  ‘mouth of an animal’
 vocabulario  ‘vocabulary’

➢ jetabulario  ‘bad speech habits characterized by the use of cuss words’

16. jeta  ‘mouth of an animal’
fotografía  ‘photography’

➢ jetografia  ‘a picture of an ugly face’

17. joder  ‘copulate’
comercio  ‘business’

➢ jodercio  ‘prostitution business’

18. nalga  ‘buttocks’
melgar  ‘Melgar’

➢ nalgar  ‘a nickname for the resort city of Melgar, Colombia where people wear small bikinis’

19. nene  ‘baby’
 licenciado  ‘licenciado’

➢ nenenciado  ‘stubborn childish person’

20. pichar  ‘copulate’
girardot  ‘Girardot’

267
21. **piedra**
   *pedagogica* ‘stone’
   ‘(Universidad) Pedagógica (Nacional de Colombia)’

   ➢ **piedragogika**
   ‘(Universidad) Pedagógica (Nacional de Colombia), where students confront the police throwing stones at them’

22. **pito**
   *menopausia* ‘penis’
   ‘menopause’

   ➢ **pitopausia**
   ‘male menopause’

23. **sucio**
   *socialista* ‘filthy’
   ‘socialist’

   ➢ **susialista**
   ‘filthy socialist’

24. **sucia**
   *sociedad* ‘filthy’
   ‘society’

   ➢ **suciedad**
   ‘filthy society’

25. **vejez**
   *juventud* ‘old age’
   ‘youth’

   ➢ **vejentud**
   ‘old youth’

**B. Rigth-Anchoring**

26. **bestia** ‘idiot, beast’

268
analfabet a  ‘illiterate’

➤ analfabestia  ‘an illiterate idiot’

27. perro  ‘snack’
    bocadillo  ‘hot dog’
    ➤ bocaperro  ‘a hot dog snack’

28. drama  ‘drama’
    crucigrama  ‘cross-word puzzle’
    crucidrama  ‘complicated matter’

29. blanda  ‘soft’
    dictadura  ‘dictatorship’
    ➤ dictablanda  ‘soft dictatorship’

30. gol  ‘goal’
    futbol  ‘football’
    ➤ futgol  ‘football (soccer) magazine published in Spain’

31. gente  ‘people’
    inocente  ‘naive’
    ➤ inogente  ‘a nobody’

32. perro  ‘dog’
    mosketero  ‘musketeer’
    ➤ moskeperro  ‘dog-musketeer in a comic-strip’

33. joda  ‘nuissance’
    paradoja  ‘paradox’
parajoda  
‘a particularly irritating paradox’

34. junta  
‘Junta (Democrática)’
plataforma  
‘Plataforma (Democrática)’

platajunta  
‘coalition of the Junta Democrática and the Plataforma Democrática.’
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