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The Phonology and Morphology of Spanish Hypocoristics

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This is dedicated to Violeta –Viole, Viol,
Vío,Violetilla… A rose by any other name.

Content

1. Introduction

This chapter will offer a brief account of the previous studies on the topic of Spanish hypocoristic formation as well as an outline with the contents of the thesis.

In a 1955 article, Boyd-Bowman tackled the issue of explaining the structural changes observed in the formation of stress-anchored and reduplicative hypocoristics in several Spanish dialects. His conclusion was that they are the product of the influence of child phonology in the adult language. Without explicitly saying so, Boyd-Bowman's work points toward a very important aspect of Spanish hypocoristic formation; i.e, the role of structural markedness. This pioneering study raises several questions regarding the phonology and morphology of hypocoristic forms that are still challenging after years of research on the topic. Especially relevant to our present purposes are the ones concerning the asymmetrical behaviors observed in left-anchored and stress-anchored nicknames with regards to segmental optimization and gender vowel augmentation.

Within a generative framework, Prieto (1992) and Lipski (1995) carried out their respective analyses following the proposals of the Prosodic Morphology program (McCarthy and Prince 1996). This program was later adapted to the parallel-constraint model of Optimality Theory (OT; Prince and Smolensky 1993/2004), which was the prevailing framework within generative phonology during the following decade. Some OT analyses on the topic of hypocoristic formation and templatic truncation in general were developed at the time by, e.g., Colina (1996) and Piñeros (2000a, 2000b), and more recently by authors such as Grau Sempere (2013). A few of these analyses, optimality-theoretical or otherwise, have been rather focused on the morphological aspects of truncation. This particular topic has been explored, e.g., by Casado Velarde (1999) and Roca and Feliú (2003).

The present analysis will be built on the existing studies, especially those developed by Colina, Piñeros and Roca and Feliú. At the same time, it will try to apply the latest developments made by some more or less well-known generative phonological theories in order to shed a light on some of the analytical problems concerning hypocoristic formation that have not been yet solved by previous proposals.

The formation of nicknames is perhaps the more challenging all of kinds of processes involving truncation in Spanish since they present some unique features regarding anchoring patterns as well as phonological transformations. In this study the focus will be placed on the behavior of trochaic bisyllabic truncates, which represent the vast majority of productive hypocoristic truncations in Spanish. These type of nicknames will be divided in three main categories: *left-anchored*, *stress anchored* and *reduplicative* truncated forms. They can be exemplified by the three more common nicknames of the male name *Enrique*: *Enri* would be the left-anchored form; *Rique*, the stress-anchored one; and *K-ike* the corresponding reduplicative variant.

All three types under discussion drastically differ from each other not only with regards to edge and stress anchoring but to the degree of structural markedness they allow to exhibit. In optimality-theoretical terms, this feature reveals the existence of different constraint hierarchies in which faithfulness occupy different positions with respect to markedness. The main proposal underlying this study is that the more common variant hypocoristic forms can be accounted for by resorting to several different kinds of mappings between input and output forms. This theoretical move will allow to produce a unified analysis of all types of truncations within a single grammar.

The thesis is organized in the following way. Chapter 1 begins describing the type of truncation that allows for the greater degree of structural markedness and finish with the one that allows for the lowest. §2.1 will deal with left-anchored truncation, §2.2 will deal with stress-anchored truncation, and §2.3 will be devoted to a particular type of stress-anchored forms known as reduplicative truncates. §2.4 will present a brief excursus on the complementary distribution of Spanish voiced obstruents and approximants, so that the segmental analyses of the following chapters are better understood. Finally, §2.4 will offer a summary of the main characteristics of all three types of truncation.

Chapter 3 will introduce the theoretical frameworks on which my prosodic and segmental analysis of Spanish hypocoristics will be based. §3.1 will describe the Contrastive Hierarchy theory (Dresher 2009). This theory claims that a hierarchy of contrastive features can be determined by means of the the so-called Successive Division Algorithm, which divides a language inventory into sets, applying successive features until every set has only one member. The algorithm will be applied to the phonological inventory of Spanish in order to establish the contrastive features of its consonantal system. These features will play an important role in the analysis of hypocoristic forms developed in the following chapter. §3.1.1

will explore the status of the palatal phonemes within the hierarchy, and will offer an explanation for some apparently unmotivated processes of palatalization. §3.2 will explain the notion of output-to-output correspondence, which is built on the proposals made by Prosodic Morphology and the pioneering works on OT. This model will be used in the following chapter to explain the phonological processes of truncation (cf. Benua 1995, 1997) and reduplication (cf. McCarthy and Prince 1994a, 1994b, 1995). Following Hye Yin (2006), Lappe (2007) and others, a proposal will be made to make use of both output-to-output and input-to-output correspondence in oder to account for the data on hypocoristic forms displayed in chapter 2.

Chapter 4 will develop and optimality-theoretic analysis of Spanish hypocoristics from the perspective of the theoretical frameworks discussed in chapter 3. §4.1, §4.2 and §4.3 will deal with the analyses of left-anchored, stress-anchored and reduplicative truncates, respectively. These analyses will be based on the idea that, while left-anchored forms are directly mapped from an underlying representation, stress-anchored and reduplicative nicknames are the product of a base-to-truncate and a truncate-reduplicant relation, respectively. §4.4 will be focused on explaining the consequences of each type of mapping on the morphology.

Chapter 5 will offer an account of hypocoristic variation in Spanish by positing the possibility of switching between each of the three different phonological mappings discussed in chapter 4 in order to fulfill certain structural requirements. The proposal will be able to explain the many typological gaps and the asymmetric phonological and morphological behaviors observed in the most common types of Spanish templatic truncation. It will do so by postulating a single grammar with three different types of relations between input and output forms in a way that no other analysis on the topic has yet proposed.

Finally, chapter 6 will offer a conclusion summarizing the most important aspects of the new approach.

2. **The typology of hypocoristic truncation in Spanish**

As stated in the introduction, this study will be focused almost exclusively on the main types of bisyllabic templatic truncation in Spanish. Bisyllabic truncation is by far the most prolific kind of truncation in the language and can be further subdivided in several subtypes according to features such as edge and stress anchoring. The main subtypes can be illustrated by the variant nicknames of the male name *Enrique* (as documented by Gutiérrez (2009) in México and Chile): *Enri* would be the left-anchored form; *Rique*, the stress-anchored one; and *K-ike* the corresponding reduplicative variant.

Generally, the preference for one type of truncation or another depends on aspects such as age, social status or regional dialect. The hypocoristics that allow for the lowest degree of structural markedness are generally regarded as the most informal and are thus more common among children and rural dialect speakers. It has also been observed that the incidence of lesser marked forms is higher in the Spanish varieties spoken in America than in the European ones (Boyd-Bowman 1955; Piñeros 2000). Nevertheless, recent studies seem to indicate that the use of lesser marked forms has been in decline in American Spanish during recent years as well (Baez Pinal 2002). Since the three types of hypocoristics under discussion may coexist within the same idiolect, I will regard them as forms that stand at different levels of structural markedness within a single grammar.

The chapter will begin describing the type of truncation that allows for the greater degree of structural markedness and finish with the one that allows for the lowest. §2.1 will deal with left-anchored truncation, §2.2 will deal with stress-anchored truncation, and §2.3 will be devoted to a particular type of stress-anchored forms known as reduplicative truncates. §2.4 will present a brief excursus on the complementary distribution of Spanish voiced obstruents and approximants, so that the segmental analyses of the following chapters are better understood. Finally, §2.4 will offer a summary of the main characteristics of all three types of truncation.[1]

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[1] The data regarding Spanish hypocoristic forms displayed in this study have been gathered, mainly, from the following sources: Boyd-Bowman (1955), van Wijk (1964), Costenla Umafia (1982), Mikío (1985), Albaigés (1995), Baez Pinal (2002), Gutiérrez (2009) and Alba (2013).

2.1. *Left-anchored truncation*

The first type of truncation to be examined is characterized by forming a bisyllabic nickname out of the two leftmost syllables of the base form. I will dub this type of truncation *left-anchored* (known also in the literature as Type A hypocoristics).

(1) Some instances of left-anchored truncation

Base form	**Nickname**	**Base form**	**Nickname**
Alb[é]rto (♂)	→ Albe(r)	Manu[é]l (♂)	→ Manu
Alej[á]ndro (♂)	→ Ale	Rafa[é]l (♂)	→ Rafa
Asunción (♀)	→ [á]sun	Rodr[í]go (♂)	→ Rodri
Isab[é]l (♀)	→ Isa	Sebastián (♂)	→ Seba(s)
Jerónimo (♂)	→ Jero	Ter[é]sa (♀)	→ Tere
José (♂)	→ Jose	Ver[ó]nica (♀)	→ Vero

In general, left-anchored truncates are segmentally faithful to the base. The first syllable of the nickname faithfully maps every feature found in the base form. This means that onsetless syllables (e.g. *Isa*), complex clusters (e.g. *Rodri*) and sonorant codas (e.g. *Álber*) are permitted. Nevertheless, unstressed final syllables tend avoid complex nuclei (e.g. *Manuel* → *M*[á]*nu*(**e*)).[2] Likewise, these forms disallow coda stops and coda fricatives other than [-s] (cf. *Sebastián* → *Sebas* with *Rodrigo* → *Rodri*(**g*). The trill segment is not allowed either since it stands in complementary distribution with the flap in coda position. All these phonotactic tendencies are shared by the bulk of non-truncated native words in the language.

[2] The status of the glide segments [w] and [j] in Spanish is controversial. Some authors like Roca (2006) deny their phonetical existence altogether. Colina (2009) accounts for mappings such as *Man*[w]*el* → *Manu* and *Dan*[j]*el* → *Dani* by contending that Spanish postconsonantal prevocalic glides are part of the syllable nucleus while postvocalic glides are part of the coda. In any case, *-ue* and *-ie* endings have a tendency to attract stress in Spanish (see Gibson 2011), which could be explained by invoking a high-ranking Weight-to-Stress Principle constraint (WSP; "Heavy syllables are stressed"). The underlying diphthongs in *Manuel* and *Daniel* would be forced to lose its final segments when truncation takes place because the domination of WSP over MAX ("Every segment of the input has a correspondent in the output") would ban the presence of complex nuclei in unstressed positions. Note, however, that this principle does not seem to apply to consonantal codas in truncated forms (e.g. *Asunción* → [á]*sun*.)

Nevertheless, this type of nicknames differ from the general tendency in the language in that they are weight-insensitive regarding coda consonants; i.e., they allow for the presence of unstressed heavy syllables (e.g. [á]*sun*, *S*[é]*bas*).[3] Note that every left-anchored truncated in (1) is a bisyllabic trochee, irrespective of its moraic structure or where the stress falls in its base form (e.g. *Jos*[é] → *J*[ó]*se*; *Jer*[ó]*nimo* → *J*[é]*ro*).

Spanish noun desinences can be masculine or feminine. The default masculine marker is *-o*, while the default feminine one is *-a*. As shown by the examples in (1), most dialects do not allow for a change in the final vowel of left-anchored nicknames in order to convey the biological gender of the name. E.g., the feminine nickname *Almu* cannot become **Alm-a* and the masculine nickname *Rodri* is not allowed to become **Rodr-o*.[4] In some occasions, the process of left-anchored truncation can render a final vowel that mismatches the biological gender of the truncate (e.g. *Rafael* (♂) → *Rafa* or *Verónica* (♀) → *Vero*). When a diminutive infix *-it-* is added to the stem, this vowel tends to remain unchanged (e.g. *Ver-it-o*, *Raf-it-a*).

Left-anchored truncation is common not only in hypocoristics but also in other manifestations of colloquial and/or affectionate language (e.g. *primero* → *prímer* 'first dibs'; *cariño* → *cari* 'hon(ey)'; *bicicleta* → *bici* 'bike'). Truncates such as *fotografía* → *foto* 'pic(ture).FEM' and *motocicleta* → *moto* 'motorbike.FEM' (with their correspondent diminutive forms *fot-it-o* and *mot-it-o*) show than vowel change is not admissible in order to match grammatical gender either.

Despite the data in (1), there are a few instances of left-anchored variant nicknames that show segmental changes of the coronal fricative sounds [s] and [tʃ]. In these variant forms, the coronal fricatives undergo what seems an unmotivated process of palatalization which will be referred to as "expressive palatalization" in the analysis of the next chapter.

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[3] See Núñez Cedeño and Morales-Front (1999: 219-221) for a review on the role of syllabic weight in Spanish prosody. Roca (2006) and Grau Sempere (2013) offer two optimality theoretic analyses of Spanish involving the constraint WSP (Weight-to-stress principle: "Heavy syllables are stressed"). Whereas Grau Sempere advocates for the moraic weight of coda consonants, Roca, who considers that complex nuclei attract stress in modern Spanish, shows some doubts about whether codas have the same effect.

[4] But cf. Bogotá Spanish as documented by Mikío (1985). This dialect shows several instances of what can be considered as either gender marker augmentation (e.g. *Rodr-i* → *Rodr-o*, *Ed-u* → *Ed-o*) or gender marker preservation (e.g. *Rodrig-o* → *Rodr-o*, *Eduard-o* → *Ed-o*).

(2) Segmental changes in left-anchored nicknames

Base form		Nickname	Example(s)	
s	→	tʃ	**S**ofía (♀)	→ [**tʃ**]ofi~[**s**]ofi
θ	→	tʃ	Mer[**θé**]des (♀)	→ Mer[**tʃ**]e~Mer[**θ**]e

This process changes the two only [continuant] coronal segments of the Spanish inventory into an affricate sound. This could be seen as an optimization of syllable onsets in order to achieve greater sonority. Nevertheless, *Sofía* → [tʃ]*ofi* shows that other [continuant] segments such as [f] are not forced to undergo any equivalent change. Likewise, *Mer*[θ]*edes* → *Mer*[tʃ]*e* indicates that highly marked margins such as coda rhotics are still allowed when this process takes place. Moreover, mappings like *Seba*s*tián* → [tʃ]*ebas*, in which the [s] in the onset palatalizes while the (even more marked) coda sibilant is kept, are clear evidence that the trigger of this kind of palatalization cannot be neither segmental nor syllabic optimization.

2.2. ***Stress-anchored truncation***

In this work I will be referring to the second type of truncated forms as *stress-anchored* (also known in the literature as Type B hypocoristics). This type of nicknames consist on a bisyllabic template formed by duplicating the main-stressed syllable of the base form and the syllable immediately following. This names are not only characteristic for their type of anchoring but also for the syllabic and segmental changes they undergo. Some examples of the possible transformations can be observed in the following list.

(3) Instances of stress-anchored truncation

Base form	**Nickname**	**Base form**	**Nickname**
Alb[é]rto (♂)	→ Be(r)to	Gon[θá]lo (♂)	→ [tʃ]alo
Alf[ó]nso (♂)	→ Poncho	Greg[ó]rio (♂)	→ Go[i̯]o
Asun[θ]ión (♀)	→ [tʃ]on-a	<H>ipólito (♂)	→ Polo
Aur[ó]ra (♀)	→ Lola	Jesús (♂)	→ [tʃ]u[tʃ]-o
Consu[é]lo (♀)	→ [tʃ]elo~[tʃ]el-a	J[ó]r[x]e (♂)	→ Co[k]e~Coc-o
Gertr[ú]dis (♀)	→ Tula	P[é]dro (♂)	→ Pe[i̯]o

The threes last nicknames in the rightmost column are mapped from bisyllabic trochaic forms. This makes its classification as a stress-anchored name ambiguous. Nevertheless, in the previous section we have seen that, although left-anchored forms occasionally undergo the palatalization of the two coronal fricative segments, they do not allow neither for segmental and syllabic changes nor for gender vowel augmentation. For this reason, I will regard optimized truncates such as [xó]r[x]e → Co[k]e as valid examples of stress-anchored truncation.

The more common segmental changes observed in stress-anchored nicknames can be summarized as follows: [f] turns into [p], [s] and [θ] turn into [tʃ], [x] turns into [k], and [ɾ] turns into [l].

(4) Most common consonantal changes in stress-anchored forms

Base form		Nickname	Example
f	→	p	Al**f**onso (♂) → **P**oncho
x	→	k	[**x**]or[**x**]e (♂) → **C**o[**k**]e~**C**o**c**o
ɾ	→	l	Au[**ɾ**]o[**ɾ**]a (♀)→ **L**o**l**a
s	→	tʃ	Ro**s**ario (♀) → [**tʃ**]ayo~[**tʃ**]a[j]a
θ	→	tʃ	Gon[**θ**]alo (♂) → [**tʃ**]alo

These changes seem to indicate that stress-anchored nicknames avoid [continuant] sounds. In principle, this would facilitate a loss of sonority of the segments in question, which in turn would make them better candidates to occupy an onset position. The process of onset optimization, as well as the motives for [continuant] segments to transform into certain sounds instead of others, will be further discussed in the following chapters. Special emphasis will be placed on the apparently unmotivated palatalization of the coronal fricatives.

In addition to the changes described in (4) above, there are other instances of less frequent consonantal transformations. Cross-dialectically, the two more relevant ones affect the voiced coronal segment [d] and its post-vocalic allophone [ð̞]. These segments can either change into [l] or palatalize into [ɟʝ]/[ʝ̞].

(5) Other consonantal changes in stress-anchored forms[5]

Base form		Nickname	Example
d/ð̞	→	ɟʝ/ʝ̞	Alfre[**ð̞**]o (♂) → Pe[**ʝ̞**]o
			Diego (♂) → [**ɟʝ**]ego
d/ð̞	→	l	Getru[**ð̞**]is (♀) → Tu**l**a
			Leopol**d**o(♂) → Po**l**o

[5] The instances of change of the voiced coronal stop allophone ([d]) may be debatable since they are possible cases of assimilation to a contiguous segment. Nevertheless, I list them in (5) for lack of better examples.

The voiced coronal segments are occasionally kept in stress-anchored truncates, especially when they are preceded by a homorganic nasal (e.g. *Rose*[n̪.ð̞]*o* → [tʃén̪.ð̞*o*]). The particular motivations for the changes in (5) above will be dealt with in the following chapters.

Even though [d]/[ð̞] tend to be avoided in this type of nicknames, the correspondent labial and dorsal voiced segments are permitted. This applies to both [b] and [g] as well as to their approximant allophones [β̞] and [ɣ̞].

(6) Preservation of non-coronal voiced segments in stress-anchored forms

Base form		Nickname	Examples
b/β̞	→	b/β̞	[**b**]íctor (♂) → [**b**]ito
			Gusta[**β̞**]o (♂) → Ta[**β̞**]o
g/ɣ̞	→	g/ɣ̞	**G**loria (♀) → **G**oya
			Santia[**ɣ̞**]o (♂) → Cha[**ɣ̞**]o

In order to better understand these alternations, the next section will offer a quick review of the complementary distribution of Spanish voiced obstruents and approximants.

The phonotactics of stress-anchored forms shows a tendency toward unmarked syllabic structures of the form CV.CV. Complex onsets are simplified either through the deletion of the more sonorous segment in the cluster (e.g. *Ma*[nw]*ela* → [n]*ela*; *Pa*[tɾ]*icia* → [t]*icha*) or through coalescence. These processes can be combined with those of consonantal change described in (4) and (5) above (e.g. *Grego*[ɾj]*o* → *Go*[l]*o*; *Al*[fr]*edo* → [p]*eyo*).

The phenomenon of coalescence occurs when a coronal consonant is followed by a [−anterior] vocoid. In autosegmental terms, the place node of the consonant is linked (assimilates) to the feature [−anterior] of the following glide. Most nicknames exhibiting this type of clusters have also a variant form in which the the vocoid is erased.

(7) Cluster reduction in stress-anchored forms

Base form		Nickname	Example	
θj	→	tʃ	Inocen[θj]o (♂)	→ Chen[tʃ]o
sj	→	tʃ	Anasta[sj]a (♀)	→ Ta[tʃ]a
tj	→	tʃ	San[tj]ago (♂)	→ [tʃ]ago~[t]ago
dj/ð̞j	→	ɟʝ/ʝ̞	Clau[ð̞j]o (♂)	→ Ca[ʝ̞]o
lj	→	ɟʝ/ʝ̞	Emi[lj]o (♂)	→ Mi[ʝ̞]o~Mi[l]o
ɾj	→	ɟʝ/ʝ̞	Grego[ɾj]o (♂)	→ Go[ʝ̞]o~Go[l]o
nj	→	ɲ	Anto[nj]o (♂)	→ To[ɲ]o~To[n]o

As the changes in (7) above indicate, when followed by a [−anterior] vocoid, the voiceless coronal stops coalesce into voiceless palatal segments while the voiced coronals coalesce into voiced palatal ones. The coronal nasal tends to transform into a palatal nasal in the same environment. It is difficult to tell whether the palatalizations of the coronal fricatives [θ] and [s] are due to the assimilation of the place feature of the following glide or are simply instances of the independently motivated optimization process described in (4) accompanied by glide deletion.

Regarding syllable codas, their presence is disallowed with the exception of homorganic nasals.[6]

[6] Spanish nasals assimilate to the following consonant, both within words and across word boundaries. This results in nasals adopting seven distinct points of articulation (Baković 2000, Piñeros 2006, Martínez-Gil 2014). The list in (8) shows the most common points of articulation displayed in hypocoristic forms.

(8) Preservation of homorganic nasals in stress-anchored forms

Nasal point of articulation			
Base form	**Nickname**	**Example(s)**	
Dental	→ Dental	Vice[n̪.t]e (♂)	→ Che[n̪.t]e
		Rose[n̪.d]o (♂)	→ Che[n̪.d]o
Interdental	→ Palatal	Inoce[n̟.θ]ia (♀)	→ Che[nʲ.tʃ]a
Alveolar	→ Palatal	Alfo[n.s]o (♂)	→ Po[nʲ.tʃ]o

Note that the voiced stop segment, which is normally the target of the transformations described in (5), has a tendency to remain unchanged after homorganic nasals (as in *Rose*[n̪.d]*o* → *Che*[n̪.d]*o*).

In terms of prosodic structure, as already stated, stress-anchored nicknames map both the main-stressed syllable of the base form and the syllable immediately following. The resulting truncate is thus always a trochee. Nevertheless, antepenultimate stressed names render hypocoristics that need also be anchored to the last vowel of the base (e.g., *Plácido* (♂) → *Pacho*; *Mónica* (♀) → *Mona*; *Tránsito* (♀) → *Tancho; Aristóbulo* (♂) → *Tobo*). These genuine stress-anchored forms should not be confused with left anchored truncates like *Placi*, *Moni* or *Transi*, nor with cases of left-anchored misalignment caused by the presence of an onsetless syllable (cf. e.g., the misaligned left-anchored form *Hipólito* → *Poli* with the stress-anchored one *Hipólito* → *Polo*).

In the cases in which, due to the final stress of the base form, a monosyllabic hypocoristic would be rendered, a final vowel bearing the gender specification of the name is added in order to obtain an unmarked bisyllabic pattern (e.g. *Asunción* (♀) → *Chon-a*; *Jesús* (♂) → *Chuch-o*). Not only can a gender marker be added to the right of a monosyllable but in some cases the last vowel of an already bisyllabic hypocoristic may also be changed so as to to reflect the biological gender of the referent. E.g., the female name *Consuel-o* may either be realized as *Chel-o* or, by adding a feminine gender marker, turn into *Chel-a.* In some occasions the final part of the noun stem is reinterpreted as a complex morpheme. Then, the pseudo-morpheme can be dropped and a gender vowel may be augmented (e.g. *Gertrud-i-s* (♀) → *Tul-a*; *Dolor-e-s* (♀) → *Lol-a*).

Finally, although the general tendency for stress-anchored nicknames is to undergo at least some of the changes described throughout this section, some variant forms may remain segmentally and syllabically faithful to their bases. This is illustrated in (9) below.

(9) Non-optimized left-anchored truncation

Base form	**Nickname**
Alberto (♂)	→ Berto~Beto
Ale[x]andra (♀)	→ [x]andra~[x]ana
Alfonso (♂)	→ Fonso~Pon[tʃ]o
Anastasio (♂)	→ Tasio~Ta[tʃ]o
Ernesto (♂)	→ Nesto~Neto

2.3. ***Reduplicative truncation***

The third and final type of hypocoristics to be discussed undergo a process that is known as *reduplicative truncation*. Reduplicative nicknames are a type of stress-anchored nicknames since they are also formed by duplicating the main-stressed vowel of the base form and the syllable immediately following. However, they differ from the kind of stress-anchored forms discussed in the previous section in that, generally, the onset with the higher marking segment(s) is deleted and replaced by a duplicate of the less sonorous segment in the other onset. For ease of recognition, reduplicative affixes will be highlighted in all the examples displayed in this section.

(10) Some instances of reduplicative truncation

Base form	**Nickname**		
Ana (♀)	→ N-ana	Gon[θ]alo (♂)	→ L-alo
Bonifacio (♂)	→ [t̠ʃ]-a[tʃ]o	Gui[j̞]ermo (♂)	→ M-emo
Carlos (♂)	→ Ca-c-o	Jerónimo (♂)	→ M-omo
Carlota (♀)	→ T-ota	Olga (♀)	→ C-oca
Catalina (♀)	→ N-ina	Refu[x]io (♀)	→ C-uco~C-uca
Enri[k]e (♂)	→ [k]-i[k]e~[k]-ico	Rodolfo (♂)	→ P-opo

As the examples in (10) show, the reduplicated consonant is not necessarily the one that immediately follows the stressed vowel but the one with the lowest sonority in the truncate. In some cases, in order to achieve a low degree of sonority, a segmental change in needed (cf. *Rodolf*$_1$*o* → *P-op*$_1$*o*). This segment is usually the onset of the last syllable. Nevertheless, there are a few exceptions to tendency, as in *Carlos* → *Ca-c-o*, in which the onset of the stressed syllable is reduplicated and infixed as the onset of the following syllable.

The consonantal changes in reduplicative forms are the same as the ones already described in the previous section for stress anchored forms: [f] turns into [p], [s] and [θ] turn into [tʃ], [x] turns into [k], [ɾ] turns into [l], and [d]/[ð̞] turn into either [ɟʝ]/[j̞] or [l]. In addition to these changes, the palatal labials [g]/[ɣ̞] transform into [k]. All the processes are illustrated in the following list.

(11a) Consonantal changes in reduplicative forms

Base form		Nickname	Example	
f	→	p	Rodol**f**o (♂)	→ [p̲-ó.**p**o]
b/β̞	→	p (?)	*No examples*	
x	→	k	Ser[**x**]io (♂)	→ [k̲-é.**k**o]
g/ɣ̞	→	k	Ol[**ɣ̞**]a (♀)	→ [k̲-ó.**k**a]
ɾ	→	l	Heliodo[**ɾ**]o (♂)	→ [l̲-ó.**l**o]
s	→	tʃ	Ro**s**a (♀)	→ [t̲ʃ̲-ó.**tʃ**a]
θ	→	tʃ	Bonifa[**θ**]io (♂)	→ [t̲ʃ̲-á.**tʃ**o]

(11b) Other consonantal changes in reduplicative forms

d/ð̞	→	ɟj/j̞	Adelai[**ð̞**]a (♀)	→ [ɟ̲j̲-á.**j̞**a]
d/ð̞	→	l	Eduar[**ð̞**]o (♂)	→ [l̲-á.**l**o]

There are no examples of consonantal changes involving the palatal nasal ([ɲ]) nor the trill segment ([r]). Likewise, I have not been able to find any instances of optimization of the voiced labial segments [b]/[β̞]. Nevertheless, considering the transformations documented in their voiced dorsal counterparts, I will assume that the outcome would be a voiceless labial stop [p].

The changes just described reduce the sounds in the phonemic inventory in reduplicative truncated forms to barely eight (those that result from the processes described in (11) in addition to [t], [n] and [m]). The remaining segments seldom reduplicate, although some rare exceptions may be found. The list in (11) seem to indicate that all [continuant] segments are disallowed in reduplicative forms, as well as all [voiced] obstruents, in addition to the cross-linguistically highly marked palatal nasal and trill sounds. All these changes will be thoroughly discussed in the next chapter.

As it was the case with non-reduplicative stress-anchored forms, reduplicants can avoid a complex cluster by either deletion of the more sonorous segment in the cluster or through coalescence. There is a difference between the two types of nicknames though. Since the palatal nasal segment is not allowed in reduplicative forms, the cluster [nj] can only be optimized by means of deleting the glide (e.g. *Herminia* → [ṉ-í.na] but not *[ṉ-í.ɲa]).

(12) Cluster reduction in reduplicative forms

Base form		**Nickname**	**Example**	
θj	→	tʃ	Bonifa[**θj**]o (♂)	→ [ṯʃ̱-aʲ.**tʃ**o]
sj	→	tʃ	Horten**s**[**j**]a (♀)	→ [ṯʃ̱-énʲ.**tʃ**a]
tj	→	tʃ (?)	*No examples*	
dj/ð̞j	→	ɟʝ/j̞	Ela[**ð̞j**]o (♂)	→ [ɟ̱ʝ̱-á.**j̞**o]
lj	→	ɟʝ/j̞	Aure**l**[**j**]a (♀)	→ [ɟ̱ʝ̱-é.**j̞**a]~[ḻé.**l**a]
ɾj	→	ɟʝ/j̞	Glo[**ɾj**]a (♀)	→ [ɟ̱ʝ̱-ó.**j̞**a]
nj	→	ɲ	Hermi**n**[**j**]a (♀)	→ [ṉ-í.**n**a]

Regarding codas, all of them are disallowed but for homorganic nasals (e.g. *Vicente* → [ṯ-én̪.te], *Hortensia* → [ṯʃ̱-énʲ.tʃa]), as it was the case for stress-anchored forms in general. There is however, an important structural trait that is particular of reduplicants alone. For obvious reasons, reduplicative forms do not allow for onsetless syllables. While non-reduplicative stress-anchored truncation can be seen as strategy to avoid initial onsetless syllables on its own (e.g. *Isabel* → *Bela*, *Antonio* → *Toño*), reduplication has the advantage to avoid initial onsetless syllables in bisyllabic words too.

(13) Reduplication as an onset repair strategy

Base form		**Nickname**
Á$_1$lvaro	→	L̲-a$_1$lo
Ana (♀)	→	N̲-ana
<H>éctor (♂)	→	T̲-eto
Isaac (♂)	→	C̲-ac-o
Olga (♀)	→	C̲-oca

Two further examples could be added to the list in (13), *D*[i.á]*na* (♀) → [n̲-á.na] and *Ed*[u.á]*rdo* (♂) → [l̲-á.lo] ~[ɟ̲ʝ̲-á.j̞o]. Nevertheless, this would only apply to the dialects that realize a vowel hiatus in the respective base forms.

Generally, the avoidance of a marked segmental structure acts as a trigger for reduplication. In the majority of examples displayed throughout this section we can observe that the onsets of the stressed syllables tend to be occupied by a highly marked, forbidden segment; for instance, a continuant sound (e.g. *Boni*[f]*acio*), a voiced obstruent (e.g. *Ro*[ð̞]*olfo*) or a trill (e.g. *En*[r]*ique*).

Nevertheless, some segments that are allowed to reduplicate also seem to be able to trigger reduplication. This is, e.g., the case of the lateral sound. Whereas [l] appears in many reduplicative forms such as *Gon*[θ]*alo* → *L̲-alo*, it is also the trigger for the reduplication of other, less marked segments (e.g. *Car*[l]*ota* → *T̲-ota*, *Fe*[l]*ipe* → *P̲-ipe*). This observation, which allows us to establish further degrees of segmental markedness, will be especially helpful in the development of a contrastive hierarchy of phonological features in §3.1.

Note that, in the following list, the 'outcome' column does not necessarily reflect all the possible sounds that may replace each trigger segment in onset position but only the cases that I have been able to document.

(14) Consonantal segments triggering reduplication

Trigger	**Outcome(s)**	**Example**	
*[f]	tʃ	Boni**f**acio (♂)	→ [t̠ʃ]-a[tʃ]o
[g]/[ɣ̞]	k, ɟj/j̞, l	Ed[**ɣ̞**]ardo (♂)	→ L̲-alo
*[x]	k, t, l,	[**x**]usto (♂)	→ T̲-uto
[b]/[β̞]	t, l	**B**raulio (♂)	→ L̲-alo
*[s]	p, k	**S**ergio (♂)	→ [k̲]-eco
*[θ]	k, t	Fran[**θ**]isco (♂)	→ [k̲]-ico
[d]/[ð̞]	p, l	Ro[**ð̞**]olfo (♂)	→ P̲-opo
[ɟj]/[j̞]	m	Gui[**j̞**]ermo (♂)	→ M̲-emo
*[l]	p, t, ɟj/j̞, n	Car**l**ota (♀)	→ T̲-ota
*[n]	t	Er**n**esto (♂)	→ T̲-eto
*[ɾ]	k, t, tʃ, ɟj/j̞, n	Marga[**ɾ**]ita (♀)	→ T̲-ita
*[r]	k, tʃ	En**r**i[k]e (♂)	→ [k̲]-i[k]e

Some instances of seeming reduplication may be better understood as the product of expressive palatalization of coronals (e.g. *Hor*[t]*ensia* (♀) → [tʃ]*encha*). The semantic process of expressive palatalization will be explained in detail in §3.1.1.

With regards to prosody, it has already been stated that these type of nicknames duplicate the main-stressed vowel of the base form and the syllable immediately following. Although almost every previous example shows that pattern, there are also cases in which it is the onset of the stressed syllable that is duplicated as the onset of the next syllable. Nevertheless, these forms exhibit the same triggering process as the ones just described in (14) above; i.e., the less marked onset of the stressed syllable substitutes the higher marked onset of the following. As in the previous examples, optimization of the reduplicated consonant may happen in a simultaneous process.

(15) Infixation of reduplicative morphemes

Trigger	**Outcome**	**Example**	
*[x]	tʃ	Ser[**x**]io (♂)	→ [t̲ʃ̲]e-[t̲ʃ̲]-o
*[ð̞]	p, tʃ	Merce[**ð̞**]es (♀)	→ [tʃ]e-[t̲ʃ̲]-e
*[l]	k, tʃ	Car**l**os (♂)	→ [k]a-[k]-o
*[n]	t	Anto**n**io (♂)	→ To-t̲-o.
*[ɾ]	t	Artu[**ɾ**]o (♂)	→ Tu-t̲-o.
ONSET	l	Ladisl[a.o] (♂)	→ La-l̲-o

Antepenultimate stressed forms form a bisyllabic trochee by keeping the stressed vowel and the last vowel of the base name. As with penultimate forms, the onset with the higher marking segment(s) is deleted. Usually, it is replaced by a duplicate of the rightmost consonantal segment in the other onset (e.g. *Jerónimo* → *M̲-omo*). If required, the duplicated segment may also become optimized.

In the cases in which, due to the final stress of the base form, a monosyllabic reduplicant would be rendered, a final vowel bearing the gender specification of the name is added in order to obtain an unmarked bisyllabic pattern (e.g. *Gabriel* (♂) → *L̲-el-o*; *Leonor* (♀) → *No-n̲-a*;). As it was the case with non-reduplicative stress-anchored forms, the last vowel of an already bisyllabic hypocoristic may also be changed so as to reflect the biological gender of the referent (e.g. *Refugi-o* (♀) → *C̲-uc-o*~*C̲-uc-a*; *Enri*[k]-*e* (♂) → [k̲]-*i*[k]-*e*~[k̲]-*ic-o*).

Finally, it should be noted that, as many other authors have suggested, reduplicants are often imitative of the very early stages of child language, in which binary reduplicative structures are prevalent. One can find many such expressions in Spanish, like *yaya* ‘grandma’, *tata* ‘sis(ter)’, *papa* ‘daddy’, *mama* ‘mom’, *caca* ‘poop’, nana ‘lullaby’, etc.

2.4. *The complementary distribution of voiced obstruents and approximants*

A brief excursus is needed at this point in order to explain the alternation of obstruent sounds described in the previous sections.

Underlying voiced obstruents in Spanish exhibit two sets of allophonic realizations in complementary distribution ([b], [d], [g], and [β̞], [ð̞], [ɣ̞]). They surface as stops in utterance-initial position and after homorganic sonorants (nasal and lateral sounds); elsewhere, they are realized as approximants.[7] Voiced obstruents are spirantized in coda position as well, since the phonotactics of Spanish cause the preceding segment to be, necessarily, a vowel.

(16) Complementary distribution of Spanish voiced obstruents and approximants

Context	**Example(s)**
/VcdO/ → [Stop] / #__	[b]enito; [d]iana; [g]abriel; [ɟʝ]olanda
/VcdO/ → [Stop] / N__	A[m.b]rosio; Ferna[n̪.d]o; A[ŋg]ustias
/VcdCorO/ → [Stop] / L__	A[l̪.d]o
/VcdO/ → [Appr] / Elsewhere	A[l.β̞]erto; O[l.ɣ̞]a; Ama[ʝ̞]a; A[s.ð̞]rúbal; Edua[ɾ.ð̞]o; E[ð̞.]mundo

Martínez Celdrán (2008) affirms that the spirantization process is not limited to bilabial, dental and velar voiced segments but that the palatal voiced phoneme [ʝ̞] should also be regarded as the approximant allophone of /ɟʝ/. This is the view that I will subscribe to in the present work.

The sounds discussed in this section were traditionally described as underlying stops that lenited into more sonorous segments, which is why the process just described is commonly known as spirantization. The reader may consult Martínez-Gil (2014) for a recent a review of the different approaches to the matter.

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[7] But see Martínez Celdrán (2008). The author contends that, after homorganic nasals, all the segments in question are realized as approximants, and not as stops.

2.5. *The typology of truncation: a summary*

The following table presents a summary of the main characteristics displayed by the three types of truncation paradigms discussed throughout this chapter.

(17) Summary of truncation types

	Left-anchored truncation	**Optimized stress-anchored truncation**	**Reduplicative truncation**
Example *Elena* (♀)	*Ele*	*Lena*	N-*ena*
Phoneme inventory	18	12	8
Fricatives allowed	✓	X	X
Rhotics allowed	✓	X	X
Non-coronal voiced obstruents allowed	✓	✓	X
Palatal nasal allowed	✓	✓	X
Phonotactics			
Complex onsets allowed	✓	X	X
Non-nasal codas allowed	✓	X	X
Onsetless syllables allowed	✓	✓	X
Anchoring			
Left-anchored	✓	X	X
Stress-anchored	X	✓	✓
Morphology			
Gender vowel augmentation allowed	X	✓	✓

The segmental, phonotactic, prosodic and morphological restrictions mentioned in the previous table will be defined as OT constraints, analyzed in OT's parallel fashion and ordered into a single constraint hierarchy in the following chapter.

The possible surface realizations of all three types of nicknames will now be displayed in a series of tables to facilitate the understanding of the segmental analyses in the next chapter. In (18) below, the sound [θ] appears in parenthesis because it is used in north-central Spain only, even though it is considerer part of the standard Castilian pronunciation. Almost everywhere else, the sound has been replaced by [s]. The allophonic nasal realizations have not been included in any of the tables.

(18) Surface inventory of left-anchored truncates and non-truncated forms

	labials	interdentals	alveolars	post-alv.	palatals	velars
stops	p b	t d				k g
affricates				tʃ ɟʝ		
fricatives	f	(θ)	s			x
approx.	β̞	ð̞		ʝ̞		ɣ̞
nasals	m		n		ɲ	
lateral			l			
trill			r			
flap			ɾ			
glides	w				j	

(19) Surface inventory of optimized stress-anchored truncates

	labials	interdental	alveolars	post-alv.	palatal	velars
stops	p b	t				k g
afrricates				tʃ ɟʝ		
approx.	β̞					
nasals	m		n	ʝ̞	ɲ	ɣ̞
lateral			l			

Note that, although generally avoided, the voiced stop [d] can occasionally appear after homorganic nasals in optimized stress-anchored truncates (e.g. *Rose*[n̪.ð̞]*o* → *Che*[n̪.ð̞]*o*).

(20) Surface inventory of reduplicative truncation

	labials	interdental	alveolars	post-alv.	velar
stops	p	t			k
afrricates				tʃ ɟj	
approx.				j̞	
nasals	m		n		
lateral			l		

Tables (18), (19) and (20) above show that the inventory of reduplicants is in a stringency relation with the inventory of stress-anchored forms, which is, at the same time, in a stringency relation with the inventory of left-anchored forms.

3. **Theoretical frameworks**

In this chapter I will introduce the theoretical frameworks on which my prosodic and segmental analysis of Spanish hypocoristics will be based. §3.1 will deal with the Contrastive Hierarchy theory (Dresher 2009). This theory claims that a hierarchy of contrastive features can be determined by means of the the so-called Successive Division Algorithm, which divides a language inventory into sets, applying successive features until every set has only one member. The algorithm will be applied to the phonological inventory of Spanish in order to establish the contrastive features of its consonantal system. These features will play an important role in the analysis of hypocoristic forms developed in the following chapter. §3.1.1 will explore the status of the palatal phonemes within the hierarchy, and will offer an explanation for some apparently unmotivated processes of palatalization.

§3.2 will explain the notion of output-to-output correspondence, which is built on the proposals made by Prosodic Morphology and the pioneering works on OT. This model will be used in the following chapter to explain the phonological processes of truncation (cf. Benua 1995, 1997) and reduplication (cf. McCarthy and Prince 1994a, 1994b, 1995). Following Hye Yin (2006), Lappe (2007) and others, a proposal will be made to make use of both output-to-output and input-to-output correspondence in oder to account for the data on hypocoristic forms displayed in chapter 2.

3.1. ***The contrastive hierarchy in Spanish***

The contrastive hierarchy in phonology (Dresher 2009) centers on the Successive Division Algorithm, which uses feature ordering found especially in work by Jakobson and his colleagues (Jakobson, Fant and Halle 1952). The basic idea is that, in each language, features are assigned in a language-particular order, termed a contrastive hierarchy. We start by assuming that all sounds form one phoneme, which is then divided into two or more sets by whichever distinctive feature is selected first. We keep dividing up the inventory into sets, applying successive features in turn, until every set has only one member.

(1) Successive Division Algorithm (Dresher 2009)

a. In the initial state, all tokens in inventory I are assumed to be variants of a single member. Set I = S, the set of all members.

b. i) If S is found to have more than one member, proceed to (c).

ii) Otherwise, stop. If a member, M, has not been designated contrastive with respect to a feature, G, then G is *redundant* for M.

c. Select a new *n*-ary feature, F, from the set of distinctive features. F splits members of the input set, S, into *n* sets, $F_1 – F_n$, depending on what value of F is true of each member of S.

d. i) If all but one of $F_1 – F_n$ is empty, then loop back to (c).

ii) Otherwise, F is *contrastive* for all members of S.

e. For each set F_i, loop back to (b), replacing S by F_i.

In this section I will address the topic of margin well-formedness in Spanish hypocoristics by applying the Successive Division Algorithm. The motivation for postulating margin well-formedness constraints is found in the Universal Syllable Margin Hierarchy proposed by Prince and Smolensky (1993/2004). This hierarchy, which is grounded on the universal sonority hierarchy, establishes a constraint ranking of segments according to their degree or sonority and position in the syllable. In the next sections the focus will be placed on syllabic margins since the data in the previous chapter have shown that faithfulness to nuclei is undominated in both truncated and non-truncated forms. The form of the relevant constraints concerning syllabic margins is the following.

(2) *M/α Parsing any segment α as a margin is prohibited.
(Prince and Smolensky 1993/2004)

The segmental optimization characteristic of stress-anchored and reduplicative truncates allows us to establish the following margin hierarchy for Spanish.

(3) Spanish margin hierarchy

{*M/[w]; *M/[j]} » **FAITH** » {*M/[d]; *M/[ð̞]; *M/[f]; *M/[θ]; *M/[s]; *M/[x]; *M/[r]; *M/[ɾ]} » {*M/[b]; *M/[β̞]; *M/[g]; *M/[ɣ̞]; *M/[ɲ]} » {*M/[ɟʝ]; *M/[ʝ̞]; *M[l]; *M/[p]; *M/[t]; *M[tʃ]; *M/[k]; *M/[m]; *M/[n]}

The previous hierarchy reflects the inventories for the different types of truncates as displayed at the end of chapter 2. The more sonorous a segment is, the more marked and thus the less likely to occupy a margin position. Left-anchored hypocoristics coincide with non-truncated Spanish forms in that they license all the segments belonging to the last three sets in (3); i.e., all the segments in (3) can occupy an onset position in left-anchored nicknames except for the glides included in the first set. On the other hand, stress-anchored forms license the segments included in the last two sets, while reduplicative truncates license only the last one.

The ranking just proposed not only includes constraints banning phonemes but also some of the allophones discussed in §2.2.1, in addition to the two glides, which I have consider as surface realizations in the previous section.[8] This is so because OT follows a principle known as Richness of the Base (Prince and Smolensky 1993/2004), which recognizes no distinction between the mappings that enforce static inventory restrictions and those that produce dynamic alternations. Richness of the base requires that the systematic differences in inventories arise from different constraint rankings, not from different inputs. According to this principle, a language's lexicon cannot decide whether the language has a

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[8] The status of the approximant sounds [ð̞], [β̞], [ɣ̞], [ʝ̞] as allophones for [d], [b], [g] and [ɟʝ] in intervocalic and coda position has already been discussed in §2.2.1. Mappings such as /webo/ → [gwé.β̞o] 'egg' and /jeɾba/ → [ɟʝéɾ.β̞a] 'grass' show the dispreference for [w] and [j] in onset position. In addition, the two rhotics, [r] and [ɾ] appear in complementary distribution in initial onsets and codas, the appearance of [ɾ] being limited to the latter position.

certain segment in its inventory since the matter has already been decided by the grammar. Therefore, the margin hierarchy of a language may ban any possible surface realization, irrespective of its underlying (phonemic) form.

Ideally, the hierarchy in (3) would have to be expressed by means of contrastive features. In the remaining of this section I will establish the contrastive features of the consonantal inventory of Spanish, which will be necessary to account for the phonological processes involving segments in hypocoristic forms. I will pursue Dresher's idea and contend that the size and shape of the Spanish inventory affects the number of features needed for each segment to be contrastively specified. Furthermore, in the analysis of the next chapter I will explain the phonological processes in Spanish hypocoristics by resorting to these features alone. Since Dresher does not assume any particular feature theory, I will employ those more commonly used by Spanish phonologists (see e.g. Núñez Cedeño and Morales Front 1999) in addition to a feature [liquid].

I will adopt a method of dealing with bilateral distinctions in which the contrastive feature will be issued in a private way. Privative oppositions are those in which one member carries some phonetic property (the marked member) that the other lacks (the unmarked member). This means that a set of segments will not be distinguished in terms of, e.g., a feature [±nasal]. Instead, a given segment will either belong to the set of [nasals] or will not. Therefore, the less marked segment of the inventory will lack any kind of feature specification.

In principle, the algorithm does not determine any order of division. Nevertheless, the contrastivist hypothesis (Curry-Hall 2007) states that the phonological component of a language operates only on those features which are necessary to distinguish the phonemes of the language from one another. I will therefore base the ordering of the Spanish hierarchy on the results of phonological processes observed in the language, such as hypocoristic onset optimization and coda neutralization.

First, I will establish the hierarchy of the less marked consonantal features in Spanish, i.e. those belonging to the inventory of the more restrictive type of reduplicants. This will allow me to emulate the splitting process involved in the first stages of acquisition.[9] In the previous chapter we saw that reduplicative nicknames such as *Marga*[ɾ]*ita* → *T-ita* or *Fran*[θís.ko] → [k-í.ko] showed the avoidance of certain consonants in the onset of a stressed syllable. In this work, I consider that these marked segments are precisely the triggers for reduplication, which is the reason why the inventory of reduplicative forms is so restricted in comparison with the other two types of Spanish hypocoristics. Nevertheless, even within this highly restricted inventory, further rankings can be established.

Spanish reduplicants license the following sounds in onset position: [l], [ɟʝ]/[ʝ̞], [p], [t], [tʃ], [k], [m], [n]; i.e. those belonging to the last set in (3).[10] There are several possible orderings in which the first distinctive features can be introduced. For instance, the initial set could be split in the following two ways.

(4a) {l, ɟʝ, p, t, tʃ, k, m, n}

Ø — {l, ɟʝ, p, t, tʃ, k}

[nasal] — {m, n}

(4b) {l, ɟʝ, p, t, tʃ, k, m, n}

Ø — {l, ɟʝ, t, tʃ, k, n}

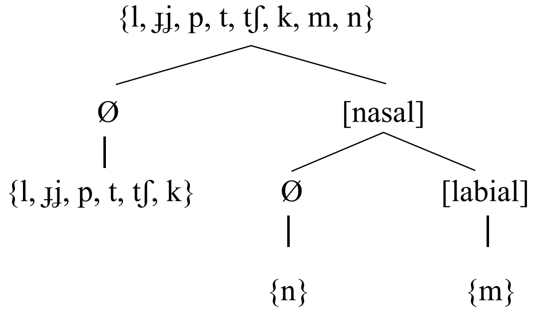
[labial] — {p, m}

In (4a) the initial set of segments is split into those bearing the marked feature [nasal] and the rest. The hierarchy in (4b) does the same with the feature [labial]. Nevertheless, whichever ordering we chose will have consequences in the making of the subsequent splits. This is shown in the hierarchies in (5) below, in which the order of inclusion of the features [nasal] and [labial] is inverted.

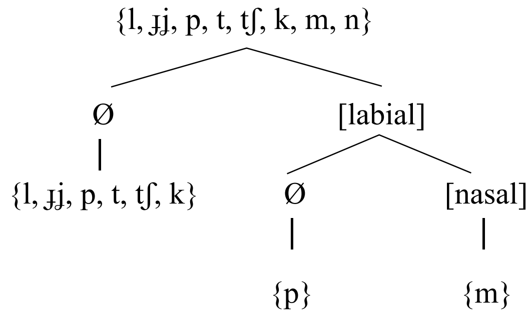
9 Cf. the similarities of the inventory of reduplicative forms displayed in table (20) in the previous chapter with the one proposed by Hase, Ingram and Bunta (2010) for Spanish children at early stages of acquisition. The inventory of Spanish reduplicates show, however, a higher indigence of palatal sounds, which might be attributed to the cases of expressive palatalization that will be discussed in the following section.

10 In the next hierarchies, allophones will not be considered as elements of the inventory, even though they needed to be part of the ranking of markedness constraints in (3) for the reasons already discussed.

(5a)



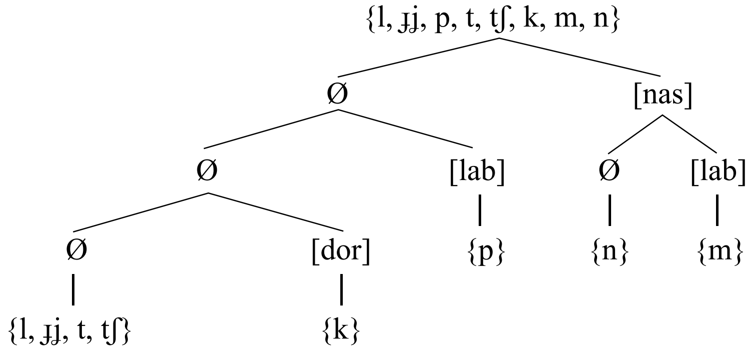
(5b)



The predominant position of /n/ with respect to /m/ in both hierarchies is accounted for by reduplicative forms like *Her*[m]*inia* → *N-ina.* However, there is a strong piece of evidence which suggests that the ordering proposed in (5a) is preferable to that in (5b). Spanish undergoes a process of nasal neutralization in coda position whereby non-coronal nasals become coronal (e.g. *Abraha*/m/ → *Abraha*[n]) and the hierarchy in (5a) allows us to find a straightforward explanation for this phenomenon if we posit the delinking of the feature [labial] from the segment in question. Furthermore, another argument in favor of (5a) is the previously discussed process of homorganic nasal assimilation, which suggests that the default Spanish nasal is not specified with respect to place.

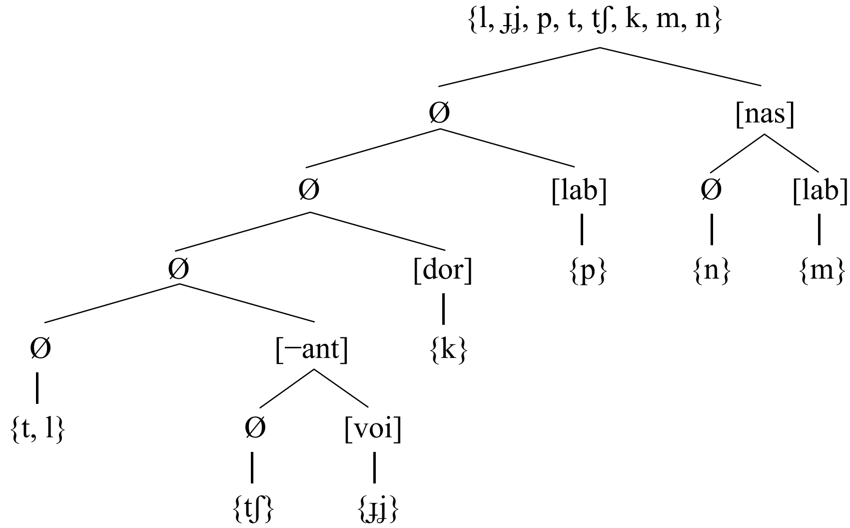
The order of inclusion of the next features is more problematic since we cannot empirically establish the marked status of some of these segments with respect to the others. There is a commonly held cross-linguistic observation which points to the fact that coronals should be the less marked segments of the inventory; therefore, I will regard them as unmarked in the following privative oppositions. The ranking of dorsals with respect to labials is more controversial but several surveys indicate that dorsals tend to be more marked (see, e.g., de Lacy 2006). I will, therefore, posit the following hierarchy, without completely ruling out alternative combinations.

(6)



Palatals are cross-linguistically more marked than other coronals. For this reason I will place both /tʃ/ and /ɟʝ/ under a node [−anterior]. Then, I will subdivide the newly created node between the unmarked member, /tʃ/, and the voiced segment.

(7)



The higher markedness of /ɟʝ/ with respect to nasals and non-coronals can be observed in reduplicants such as *Gui*[j̯]*ermo* → *M-emo*. On the other hand, forms like *Fe*[l]*ipe* → *P-ipe*, *Cata*[l]*ina* → *N-ina* or *Ade*[l]*aida* → [ɟʝá.j̯a] show that /l/ is more marked than the rest of the segments in the reduplicative inventory. In particular, the reduplicative nickname *Car*[l]*ota* → *T-ota* illustrates the markedness of the lateral with respect to default coronal segment. Accordingly, the next logical move would be to label /l/ as [voiced] and proceed to do the last split in the inventory. Nevertheless, there are at least two phonological processes that advise against this arrangement.

The first process can be observed in one of the examples that I have just used to illustrate the high markedness of [l], *Ade*[l]*aida* → [ɟʝá.ʝ̞a], which shows that [l] is more marked than [ɟʝ]/[ʝ̞]. We cannot posit a constraint hierarchy in which a segment defined as [−anterior] and [voiced] (i.e. /ɟʝ/) is less marked than a segment defined by the feature [voiced] alone (i.e. /l/).

The second process that advises against the specification of [l] as [voiced] will is expressive palatalization (Kochetov and Alderete 2011). This phenomenon, which will be dealt with in detail in the following section, is a semantic process that, in Spanish, causes the voiceless coronals [t], [s] and [θ] to transform into a voiceless palatal, and the voiced coronal [d]/[ð̞] to transform into a voiced palatal. If we define the lateral as the less marked [voiced] segment, it would be difficult to justify the palatalization of a more marked voiced segment [d]/[ð̞] in the same context where [l] fails to palatalize.

In order to solve this conundrum, I will add segment /d/ to the inventory of reduplicative forms (even though it is absent from any documented instance of reduplication) and I will defined it as the less marked [voiced] sound in the hierarchy. The lateral sound will be then labelled as [liquid] and considered as the marked member of the opposition between [voiced] sounds (see, e.g., Walsh Dickey (1997) for a proposal supporting that liquids are a natural class defined by the major class feature [liquid]).

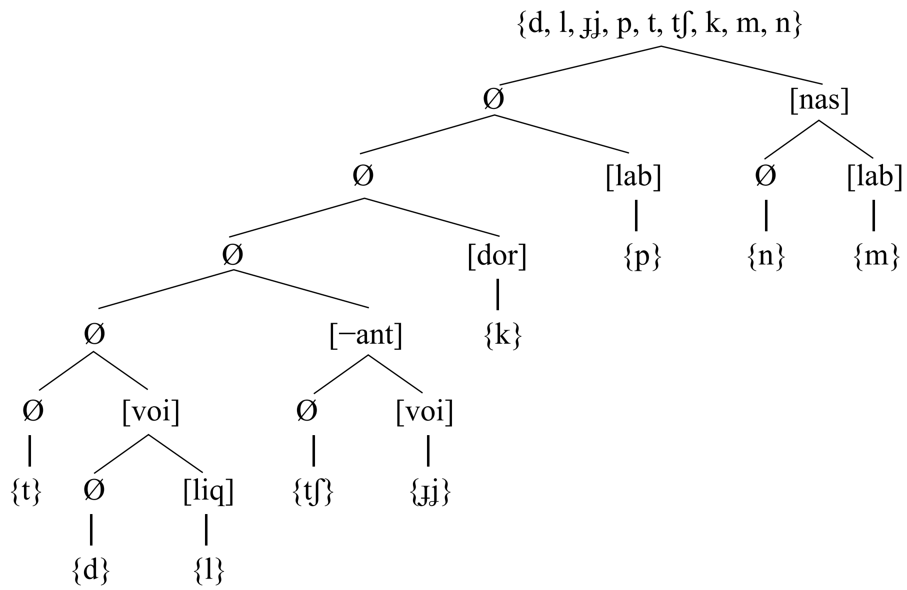
This arrangement poses some questions, though. First, why is an obstruent segment less marked than a lateral one regarding the feature [voice]. Second, if /d/ is so unmarked a segment, why is it not present in reduplicants nor in most stress-anchored forms? The former question can be addressed by affirming that, as the approximant allophone of [d] in post-vocalic position suggests, there is not enough evidence to maintain that /d/ is in fact specified as a stop or even as an obstruent segment.

As for the latter question, the absence of [d] and [ð̞] from the inventory of optimized hypocoristics can be accounted for by two different phenomena. One of them is the already mentioned process of expressive palatalization, which forces the less marked coronals to palatalize. This would explain transformations like *Alfre*[ð̞]*o* → *Pe*[ʝ̞]*o* and *Eduar*[ð̞]*o* → [ɟʝá.ʝ̞o] without recurring to the notion of onset optimization. The other process is the occasional change of [d]/[ð̞] into [l], as illustrated by *Eduar*[ð̞]*o* → *La*[l]*o*, *Gertru*[ð̞]*is* → *Tu*[l]-*a* or *Leopol*[d]*o* → *Po*[l]*o*. The domination of both ONSET (“Syllables must have an onset") and OCP ("Adjacent similar segments are disallowed") over FAITH would explain why the default voiced segment needs to become a [liquid] in an intervocalic context.[11] This kind of constraint interactions will be explained in full detail in the following sections.

The marked status of [d]/[ð̞] can also be observed in mappings such as *Ferna*[n̪.ð̞]*o* → *Nano*, in which, exceptionally, it is the homorganic coda that is maintained while the onset stop becomes deleted. Likewise, cf. the behavior of the members of the consonant cluster in *Al*[fɾ]*redo* → [f]*eyo*~[p]*eyo* with those in *Ro*[ð̞ɾ]*igo* → [r]*igo* (but, crucially, not *[d]*igo*).

According to the arguments displayed so far, I posit the following implementation of the contrastive hierarchy for Spanish reduplicants.

(8) Contrastive hierarchy of Spanish reduplicative nicknames



Although it may seem redundant to tag a sonorant segment as [voiced], there is a phonological reason to do so with liquids. In §2.2 and §2.3 we saw that the lateral coalesces with the following (tautosyllabic) high vocoid in stress-anchored and reduplicative forms, a process that results in a voiced palatal segment (e.g., *Emi*[lj]*o*→ *Mi*[ʝ̞]*o; Aure*[lj]*a* →

[11] Cf. the general process of intervocalic [ð̞] deletion in Spanish: *Acaba*[ð̞]*o* → *Acabao* 'finished'; *Apelli*[ð̞]*o* → *Apellío* 'last name'. The phenomenon is especially common when [ð̞] appears between two anterior vowels. The lower status of ONSET in the hierarchy of non-truncated forms would explain the total deletion of the coronal in these cases.

[ɟj-é.ja]). Therefore, the lateral must be labelled as [voiced] so that it coalesces into the *voiced* lateral segment instead of the voiceless one.

The hierarchy in (8), together with the discussed examples of reduplicative forms, allow us to establish the following ranking of margin markedness constraints in Spanish.

(9) Constraint raking of reduplicative nicknames

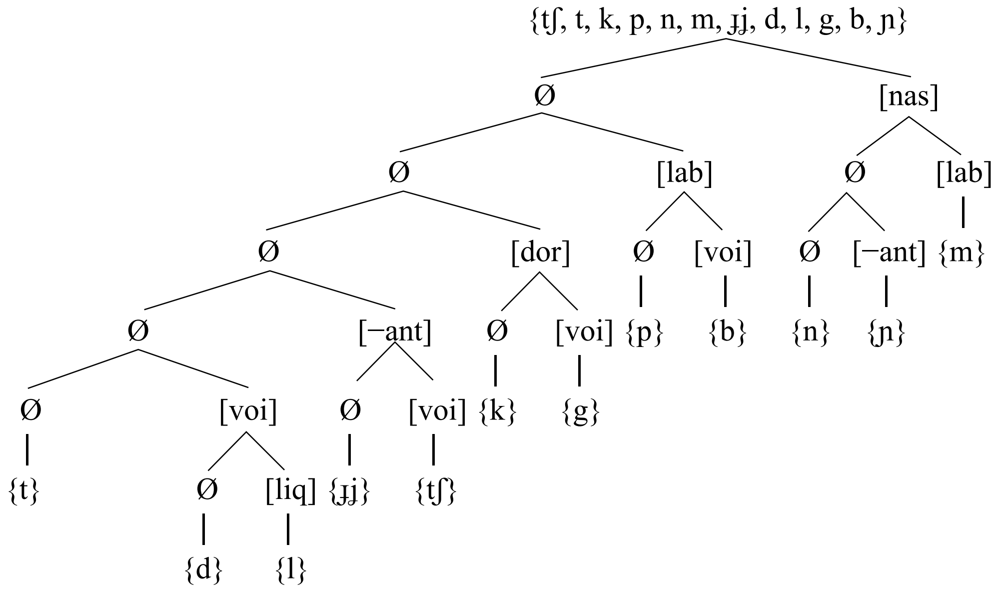
FAITH » *M/[liq] » *M/([voi]&[−ant]) » *M/[voi] » *M/([nas]&[lab]) » *M/[−ant] » » *M/[dor] » *M/[lab] » *M/[nas]

This leaves us a hierarchy in which [t], which lacks all kinds of features, becomes the less marked segment in the inventory. This insight is supported by cross-linguistic observation as well as by cases of Spanish reduplication like *Er*[n]*esto*→ T-eto, which suggests that [t] is even less marked than the less marked nasal segment.

The local constraint conjunctions banning voiced palatals and labial nasals in (9) follow the proposal made by Prince and Smolensky (1993/2004), according to which a locally-conjoined constraint C is violated iff both of its conjuncts, C1 and C2, are violated in a local domain D.

Next, I will add the features which characterize the segments that are permitted to appear in optimized stress-anchored nicknames but not in reduplicants: the voiced non-coronal obstruents /g/ and /b/ and the palatal nasal /ɲ/. The resulting hierarchy is the following.

(10) Contrastive hierarchy of Spanish stress-anchored non-reduplicants



I have placed the palatal nasal in the lower part of the [nasal] node to account for the process of depalatalization in Spanish (see Lloret and Mascaró 2006). Moreover, the placement of the voiced labial below the [labial] node and of the voiced dorsal below the [dorsal] node is justified by the processes of onset optimization observed reduplicative nicknames such as *Ol*[ɣ̞]*a* → [K-ó.ka] (recall that [ɣ̞] is a post-vocalic allophone of /g/). Both processes, depalatalization and onset optimization are thus explained as the delinking of the more marked feature of the segment.

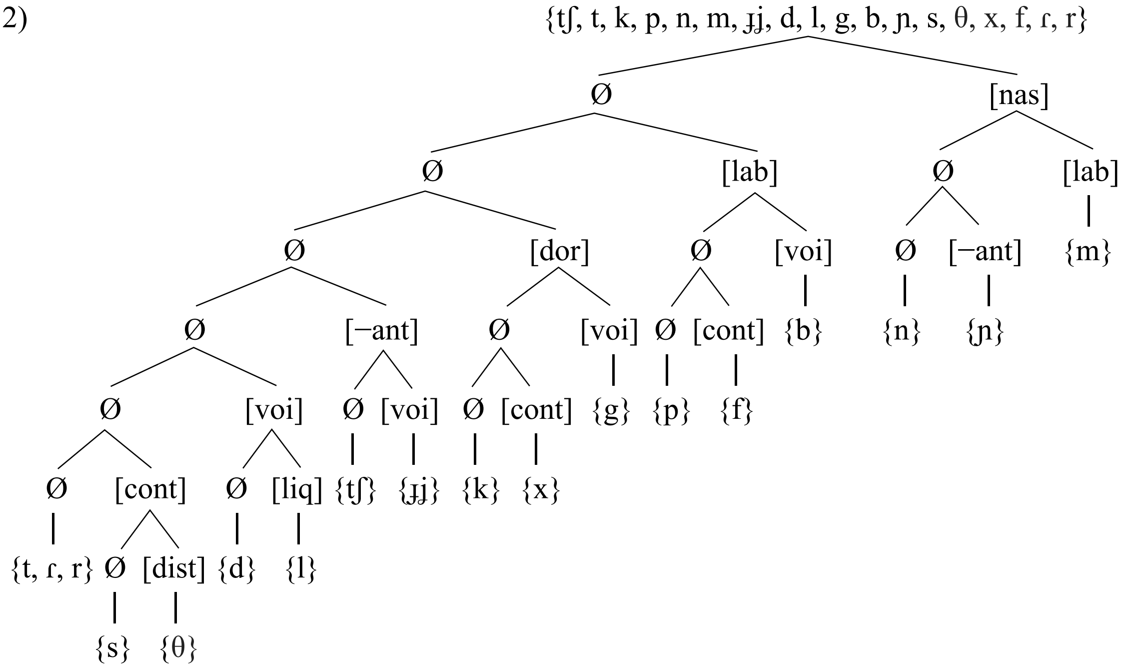
As before, I will go on to establish the ranking of markedness constraints resulting from the new additions to the hierarchy.

(11) Constraint ranking of stress-anchored non-reduplicants

FAITH » {*M/[voi]&[lab]); *M/([voi]&[dor]); *M/([voi]&[nas])} » *M/[liq] »
» *M/([voi]&[−ant]) » *M/[voi] » *M/([nas]&[lab]) » *M/[−ant] » *M/[dor] »
» *M/[lab] » *M/[nas]

Lastly, I will add the contrastive features that are characteristic of left-anchored truncates. First, the four fricative phonemes /s/, /θ/, /x/ and /f/ will be labelled as [continuant]s. This gives rise to the new splits of the hierarchy displayed in (12) below.

(12)

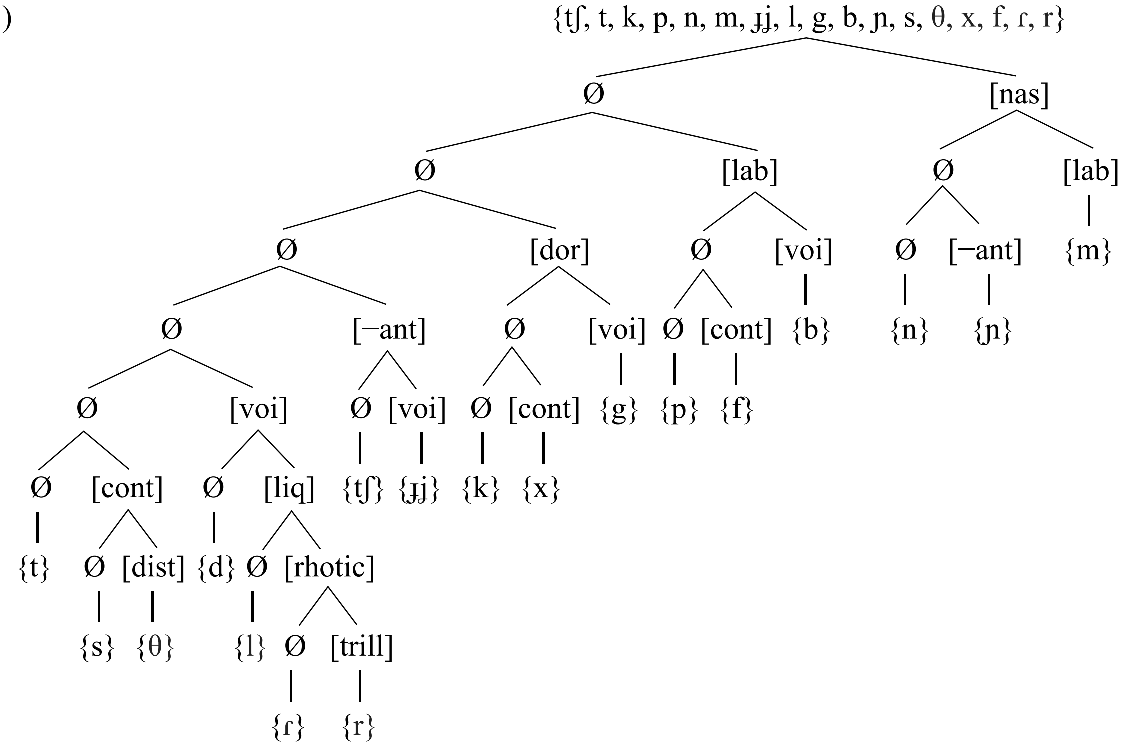


The placement of the fricative labial below the [labial] node and of the fricative dorsal below the [dorsal] node is justified by the process of onset optimization illustrated by stress-anchored nicknames such as *Al*[f]*onso* → [p]*oncho* and [x]*or*[x]*e* → [kó.ke]. Onset optimization is thus explained as the delinking of the marked feature [continuant].

Mappings such as *Su*[s]*ana* → [tʃ]*ana* and *Gon*[θ]*alo* → [tʃ]*alo* seem to suggest that the coronal fricatives should be placed under the node [−anterior]. Nevertheless, these transformations will be accounted for in the following section as due a special, semantic process that is known as expressive palatalization. Therefore, in (12) above I have chosen to create a new node [continuant] for the two coronal fricatives. On the other hand, the marked status of /θ/ with respect to /s/ in the hierarchy lies in the fact that /θ/ is not only cross-linguistically more marked than /s/ but has altogether disappeared from the majority of dialects of Spanish, being replaced by /s/ itself (e.g. *Gon*[θ]*alo* → *Gon*[s]*alo*). Following the taxonomy of many Spanish phonologist, I have labeled the marked interdental segment as [distributed] (see, e.g., Núñez Cedeño and Morales-Front 1999).

Finally, the two rhotics will be added to the node [liquid], which, in turn, had been already been placed below [voiced].

(13)



Two different phonological processes observed in hypocoristic forms justify the inclusion of the rhotics as marked elements below [liquid]. One of them is the optimization of [ɾ] into [l] in stress-anchored anchored nicknames such as *Au*[ɾ]*o*[ɾ]*a* → [ló.la] and *Heliodo*[ɾ]*o* → *Lo*[l]*o*. The other process is the palatalization of the cluster [ɾj] into the voiced palatal segment, as in *Rosa*[ɾj]*o* → *Cha*[j̞]*o*. The flap needs to be specified as [voiced] so that it coalesces into the voiced palatal instead of the voiceless one.

Regarding the marked status of the trill segment with respect to the flap, /r/ it is clearly more marked than /ɾ/ due to cross-linguistic and lexico-statistical evidence. The placement of both rhotics below the same node is accounted for by the fact that the two sounds appear in complementary distribution in Spanish onsets and codas.

The next ranking shows the interaction of markedness constraints resulting from the new additions to the hierarchy.

(14) Constraint ranking of Spanish left-anchored truncation

FAITH » {*M/[cont]; *M/[rhotic]} » {*M/[voi]&[lab]); *M/([voi]&[dor]); *M/([voi]&[nas])} » *M/[liq] » *M/([−ant]&[voi]) » *M/[voi] » *M/([nas]&[lab]) » » *M/[−ant] » *M/[dor] » *M/[lab] » *M/[nas]

There are some other markedness interactions that can be inferred from the hierarchy in (13), such as *M/[dist] » *M/[cont] and *M/[trill] » *M/[rhot]. Nevertheless, the constraint ranking in (14) will suffice for our present purposes.

3.1.1 *The status of palatals in Spanish hypocoristics*

Palatals have a prominent role in Spanish hypocoristic forms. The high incidence of [tʃ] and [ɟʝ]/[ʝ̞] could make some readers wonder if these sounds are, in fact, less marked than what the hierarchy in (13) indicates. In this section I will present a series of arguments in favor of the absolute underspecification of the voiceless palatal segment, only to be later refuted. The conclusion will be that the apparently unmotivated palatalization of some consonants is due to the presence of a floating feature [−anterior] that manifests a semantic process known as expressive palatalization (Kochetov and Alderete 2011).

In the last section, some phonologically unmotivated palatalizations have been left unexplained. These unaccounted processes may be explained by positing some changes in the contrastive hierarchy so that the voiceless palatal [tʃ] becomes the default unmarked consonant in Spanish. The absolute unmarked status of the palatal segment could be justified by a series of arguments that I will now proceed to enumerate.

(a); although they are usually regarded as more marked than other coronals, there is plenty of cross-linguistic evidence indicating that palatals are central in the early stages of language acquisition. Words like [tʃí.tʃa] 'meat.FAM' or [tʃú.pi] 'great.FAM', are only a couple of examples among hundreds of Spanish colloquial words that have their origin in the preference that child language shows for palatal sounds.

(b); the less marked points of articulation tend to license a greater number of segments than the more marked ones. E.g., Castilian Spanish has two different alveolar fricatives (/s/ and /θ/), while only a single labial (/f/) and a single dorsal (/x/). The fact that two obstruent palatals (/tʃ/ and /ɟʝ/) are allowed in reduplicative forms, while only one coronal dental is, points at the unmarked status of the non-dentals. This is especially remarkable since the voiced counterpart of /t/ (i.e. /d/) is not even allowed in stressed-anchored forms.

(c); it is true that the pronunciation of [tʃ] is articulatorily more complex than that of [t] in most Spanish dialects; nevertheless, this does not necessarily make the segment *phonologically* complex. In fact, the many realizations of /tʃ/ across dialects can be regarded as a sign of its absolute unmarked status within the language inventory. For instance, Baker (2004) affirms that /tʃ/ can be realized as a fricative in some Andalusian, Caribbean and Mexican dialects, whereas, in some dialects of northern Spain, it acquires a very forward articulation (in essence, the segment becomes depalatalized and produced as a dental variant). Furthermore, a recent study by Martín Gómez (2010) has documented that, in a particular area of the Canary Islands, two different variants of /tʃ/ can be found that significantly differ from the standard realization of the sound in Peninsular Spanish.

(15) Some dialectal and contextual realizations of /tʃ/

	Alveolar	Palato-Alveolar
Stop		[tʲ]
Affricate	[ts]	[tʃ]
Fricative		[ʃ]

Likewise, /ɟʝ/, the voiced affricate correspondent to /tʃ/, is not produced as a complex segment either in many dialectal and contextual realizations, as illustrated in (16) below.

(16) Some dialectal and contextual realizations of /ɟʝ/

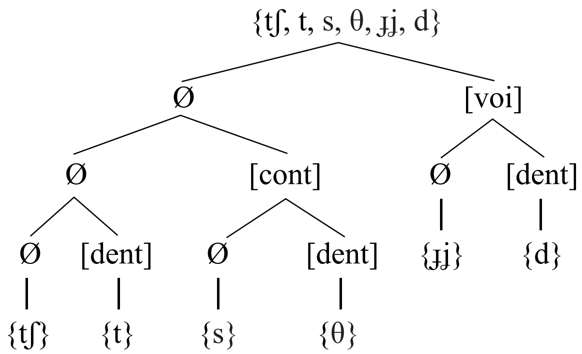
	Palato-Alveolar
Affricate	[ɟʝ]
Fricative	[ʒ] / [ʃ] / [ʝ]
Approximant	[ʝ̞]

This is the kind of vacillating phonetic realization expected for highly unmarked segments. The high degree of variation of the palatal sounds within the coronal place of articulation is favored by the very specific articulation of the Spanish anterior segments /d/ and /t/, which are generally pronounced as the (inter)dental sounds [d̪] and [t̪]. Such a marked feature of the coronal obstruents is not shared by many languages which, like English, lack the variety of palatal sounds found in Spanish. This observation takes us directly to the next argument in favor of the unmarked status of /tʃ/.

(d); from the perception point of view, most Spanish acquiring English as a second language interpret the english alveolar [t] as [tʃ]. This can be noticed, e.g., in the common pronunciation of the English word *two* as [tʃu].

(e); the underlying coronal fricatives /s/ and /θ/ are realized as /tʃ/ in reduplicative and stress-anchored nicknames (e.g. *Su*[s]*ana* → [tʃ]*ana*; *Gon*[θ]*alo* → [tʃ]*alo*). Likewise, in the last section we saw that, in the same context, /f/ was optimized into [p] and /x/ was optimized into [k]. The palatalization of the coronal fricatives can be seen as parallel to the process of labial and dorsal optimization by resorting to the alternative contrastive hierarchy posited in (17) below. The inventory has been restricted in order to show the [voiced], [continuant] and [dental] nodes only.

(17) Alternative contrastive hierarchy



Accordingly, the fricative sounds would transform into the less marked segment of the inventory by losing the marked feature [continuant]. However, if [t] were in fact the less marked coronal in the inventory, the optimization of /s/ and /θ/ into /tʃ/ would be hard to justify.

(f); another argument in favor of considering the alveo-palatal sounds as less marked than the dental ones is the change of [d]/[ð̞] into [ɟʝ]/[ʝ̞]. By resorting again to the hierarchy in (17), optimizations such as *Alfre*[ð̞]o → *Pe*[ʝ̞]*o* or *Eduar*[ð̞]*o* → [ɟʝá.ʝ̞o] can be easily explained by the loss of the marked feature [dental] while still preserving the feature [voiced].

(g); there are several instances of hypocoristics showing what could be considered [tʃ] epenthesis. Some of these forms are: *Ramón/Simón* → *Mo*[n^{j}.tʃ]*o*; *Benjamín/Fermín* →

Mi[nʲ.tʃ]*o*; *Joaquín* → *Qui*[nʲ.tʃ]*o*; *Román* → *Ma*[nʲ.tʃ]*o*; *Juan* → *Jua*[nʲ.tʃ]*o*.[12] Roca and Felíu (2003) maintain that [tʃ] is epenthetic in all the aforementioned examples. The reason for insertion could be to maximize the nasal coda in optimized stress-anchored forms since, as discussed in the previous section, nasals are the only consonantal segments that can be kept in coda position, provided that they assimilate to the point of articulation of a following obstruent.

There are also some examples of a possible epenthetic palatal in medial position, as in *Elis*[e.o] → *Che*[j̞]*o*. The fact that we find the voiced correlate of [tʃ] would be due to the intervocalic context in which the segment is inserted.

(h); there are a few documented changes of [l] into [tʃ], like *Fe*[l]*ipe* → [tʃ]*ipe*. The lateral does not usually optimize into another segment (presumably because of the high ranking of the faithfulness constraint IDENT([approx], as it will be discussed in chapter 4). The transformation could be thus seen as a change into the less marked segment of the inventory. In addition, Boyd-Bowman (1955) documents several instances of Chilean hypocoristics showing what could be optimization of [t] into [tʃ]: *Gus*[t]*avo* → [tʃ]*avo*; *Mar*[t]*ín* → *Ma*[tʃ]*ín*; [t]*elmo* →[tʃ]*emo*; *Víc*[t]*or* → *Bi*[tʃ]*o*. Lastly, some reduplicative forms also seem to indicate the higher-marking status of [t] over [tʃ], as *Hor*[t]*ensia* → [tʃ-énʲ.tʃa].

This puts and end to the arguments in favor of the underspecification of palatals. Nevertheless, the unmarked status of these segments raises several questions. To begin with, if affricates are cross-linguistically more marked than other coronals, why should [tʃ] have so central a role in the Spanish inventory, especially when affricates were not even part of the consonantal inventory of Classical Latin (from which Spanish originated)?

In order to account for the analytical problems raised by certain processes of palatalization, I will adopt an approach involving the already discussed process of expressive palatalization[13]. Expressive palatalization is grounded in iconic sound-meaning associations exploiting acoustic properties of palatalized consonants and thus is inherently different from regular phonological palatalization. This would explain why child language tends to use

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[12] Final -*cho* might be interpreted as a fossilized allomorph of the diminutive/pejorative suffix -*ucho* in -*n* final words. In any case, this putative suffix would have stopped being productive, both in truncated and non-truncated forms (cf. *Juan* → *Juan-ucho*; *flan* → *flan-ucho* 'creme caramel.PEJ', but **flan-cho*).

[13] Thanks to my thesis supervisor, M. Krämer, for this and many other valuable suggestions.

palatals so often, as argued in (a) above, since expressive palatalization applies in babytalk registers, diminutive constructions and sound symbolism.

According to Kochetov and Alderete, palatal consonants have an ability to function iconically as phonological correlates of 'smallness' and 'childishness', which makes hypocoristic forms an expected target for this particular type of palatalization. In turn, this means that several linguistic processes may aim at conveying a diminutive meaning simultaneously. According to this view, *Ro*[s]*ario* → [tʃa]*yo* → [tʃ]*ay-it-o* would illustrate a case of truncation occurring together with the expressive palatalization of [s] and the affixation of the diminutive morpheme *-it-*.

The articulatory and perceptive arguments in favor of unmarked palatals developed in (b), (c) and (d) are still valid, although they are not conclusive. On the other hand, the proposal of an alternative hierarchy to explain the palatalization cases in (e) and (f) faces some unsurmountable technical problems. To begin with, the hierarchy in (17) does not reflect the order of acquisition of consonants as suggested by the different inventories of hypocoristic forms. Even if we concede that [t] is more marked than [tʃ], (17) places [t] in a position much more marked with respect to the other segments in the inventory than it actually is. We could place the node [dental] above the [continuant] and [voiced] nodes to solve this, but then both [θ] and [d] would be forced to belong to [dental], making the wrong prediction that both segments optimize into [t].

Despite this, we still need to account for the unexpected change of [s] into [tʃ]. In order to do so, Piñeros (2000) proposes to employ the feature [strident]. He argues that the palatal segment would be the optimal coronal sound if [strident] needed to be preserved. However, this proposal does not take into account the fact that the interdental fricative characteristic the Castilian dialect ([θ]) palatalizes in exactly the same contexts as [s] does. It could be argued that both [s] and [θ] are transformed into the voiceless affricate in order to preserve the feature [+continuant]. Nevertheless, this would presuppose that the double articulation of the affricate sound is expressed in featural terms as [±continuant], which would be at odds with a theory of private oppositions as the one I have developed so far in this chapter.

According to Kochetov and Alderete's proposal, although sibilants are the optimal targets of expressive palatalization, coronal obstruents in general have a strong tendency to undergo this process. I will, therefore, treat the palatalization of both coronal fricatives as a loss of the feature [continuant] accompanied by the assimilation of a floating feature [−anterior]. The palatalization of [d]/[ð̞] into [ɟʝ]/[ʝ̞] will be accounted for in a similar way: the voiced coronal segment assimilates the floating feature while still retaining its [voiced] specification. Likewise, The cases of epenthesis and [t] palatalization described in (g) and (h) will be reanalyzed as instances of expressive palatalization caused by the assimilation of the least marked coronal segment, [t], to the floating feature [−anterior].

3.2 *Prosody and morphology within OT*

The research program of Prosodic Morphology aims at re-interpreting the interaction of morphological and prosodic principles as an interaction between phonological and morphological constraints. According to this theory, if phonological constraints outrank morphological constraints in a grammar, morphemes will be shaped by general phonological principles. As a further theoretical development of Prosodic Morphology, Generalized Template Theory (McCarthy and Prince 1994b) explains templates as a product of universal phonological principles determined by particular correspondence relations between two output forms. The framework that studies that and other possible relations between underlying and surface forms is known as Correspondence Theory.

Originally, McCarty and Prince applied the notion of output-to-output correspondence to the relation between base and reduplicant. According to the Correspondence Theory of reduplication, base and reduplicant are simultaneously produced. This means that not only can the reduplicant copy the base but the base may also copy the reduplicant under the adequate ranking of faithfulness constraints.

Output-to-output correspondence was later adapted to other processes involving the maximization of phonological identity between morphologically related output forms, such as truncation (Benua 1995, 1997). In truncation, a derived form (the truncate) copies a phonological property of its base (the non-truncated output form), which is also free-standing form. Unlike reduplication, the input-to-output and output-to-output relations in truncation are not demonstrably simultaneous and the base of truncation cannot copy properties of its truncated version. The base of truncation is prior to the truncated version in the same way that an input is prior to its related output, a relation which is illustrated by diagram (19) below.

(19) Output-to-truncate correspondence

B-Trunc Identity

Base → Truncated form

B-I Faithfulness ↑

Input

According to Benua, truncation and reduplication are mirror images. While reduplication is morphology that lengthens words, truncation is morphology that shortens them. The two phenomena also resemble one another, and differ from other morphological operations, in that neither involves segmental affixation. As the analysis of reduplicative truncates in §3.4 will show, both processes can even can take place simultaneously in the same form.

One of the examples that Benua uses to illustrate the output-to-output correspondence relation between base and truncated form is the English nickname [trí.ʃə], which faithfully maps the stress in the base form Patricia. §4.2 will deal with similar stress-anchored truncations of Spanish names which are also evidence for the proposed correspondence relation. E.g, one such truncate would be *Nel-o*, derived from the male name *Manuel*. It is hard to justify *Nel-o* as being directly mapped from an underlying form if we accept the general assumption that underlying representations do not bear information regarding stress.[14] Right anchoring alone is not sufficient to explain the addition of the masculine gender marker -*o* at the right edge of the truncate in order to conform the bisyllabic trochee template that is characteristic of Spanish nicknames. On the other hand, [ma.nwél], the output form of /manuel/, does bear the stress information that forces both the deletion of the previous syllable and the addition of the gender marker.

(20) Output-to-truncate correspondence (implementation)

B-Trunc Identity

B [ma.nwél] → **T** [né.l-o]

B-I Faithfulness ↑

I /manuel/

Not only are templatic morphemes unmarked from a prosodic point of view but also with regards to syllabic and segmental structure. Building on this observation, Generalized Template Theory analyzes the size and shape of the template itself as the result of an Emergence of the Unmarked ranking. The Emergence of the Unmarked (McCarthy and Prince

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[14] See Núñez Cedeño and Morales-Front (1999: 209-219) for a description of Spanish stress patterns and an account of the lexical specification versus pre-specification debate.

1994a) refers to situations where some marked structure is generally allowed in a language, but banned in particular contexts. These effects typically follow from rankings where a markedness constraint is dominated by a faithfulness constraint that blocks the activity of the markedness constraint in some, though crucially not all, contexts. Therefore, no morpheme-specific constraints are employed to account for truncation. Instead, it is assumed that the size of a template results from a set of markedness constraints which, although ineffective in the language as a whole, emerge under specific rankings in the truncated form.

In order to account for this effect in Spanish truncation, it will be necessary to differentiate between two kinds of output-to-output faithfulness constraints: those penalizing differences between input and base and those penalizing differences between base and truncate. First, I will define the two versions of MAXIMIZE (MAX), the OT constraint that militates against deletion.

(21) MAX(Input-Output) Every segment of the input has a correspondent in the output. (McCarthy and Prince 1995)

MAX(Base-Trunc) Every segment in the base has a correspondent in the truncate. (Benua 1995)

The unmarked templatic form that is characteristic of Spanish hypocoristics is obtained through the interaction of the two versions of MAX with a series of size restrictor constraints that will shape the truncated form. In order to obtaine the desired results, MAX(Input-Output) must dominate the size restrictor constraints, which in turn must dominate MAX(Base-Trunc).

(22) Emergence of the Unmarked effect in base-to-truncate forms

MAX(Input-Output) » prosodic word constraints » MAX(Base-Trunc)

In their analysis of Diyari (Australian Aboriginal; extinct) reduplication, McCarthy and Prince (1994a) develop a constraint-based analysis of minimal word reduplicative templates.

Minimal words are maximally unmarked prosodic words. A prosodic word is unmarked when it dominates a binary foot that is aligned at the edge of the prosodic word, and when all syllables in the prosodic word are footed. Word minimality is enforced by domination of faithfulness constraints by the Prosodic Word Restrictor (PWR) constraints: FOOT-BINARITY (FT-BIN), PARSE-SYLLABLE (PARSE-SYLL) and ALL-FEET-RIGHT (ALL-FT-R).

(23) Prosodic word constraints (McCarthy and Prince 1993, 1994a)

FOOT-BINARITY	Feet are binary at some level of analysis.
PARSE-SYLLABLE	All syllables are parsed into feet.
ALL-FEET-RIGHT	Every foot stands in final position in the prosodic word.

Following Piñeros (2000a, 2000b), in (23) above I have adapted the ALL-FEET-LEFT constraint applied by McCarthy and Prince to Diyari reduplication to ALL-FEET-RIGHT, which is better suited to the prosodic requirements of Spanish.[15]

If the constraints in (23) are satisfied, a single binary foot stands at the right edge of the PrWd. Additional feet and unfooted syllables are not tolerated. The next tableau will show the interaction of the prosodic word constraints with MAX(Base-Trunc). The output candidates are mapped from an hypothetic four-syllable base.

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[15] The domination of ALL-FEET-RIGHT explains why penultimate syllables are considerably more susceptible to stress assignment in Spanish (e.g. [al.(fré.ð̞o)] 'Alfredo').

(24) {FT-BIN; ALL-FT-R; PARSE-SYLL)} » MAX(B-Trunc)

[(ˌσσ)(ˈσσ)]	FT-BIN	ALL-FT-R	PARSE-SYLL	MAX (B-Trunc)
a.☞[(ˈσσ)]				**
b. [σσ(ˈσσ)]			*!*	
c. [(ˌσσ)(ˈσσ)]		*!		
d. [(ˈσσσσ)]	*!			

Candidate (24a) conforms to an optimal truncate in Spanish. It achieves its unmarked bisyllabic form by incurring at least two violations of MAX(B-Trunc), the constraint militating against deletion of base segments in the truncated form (at least one for each deleted syllable). The other candidates satisfy MAX(B-Trunc), but they have to pay to high a price to do so. Candidate (24b) violates PARSE-SYLL because its two first syllables are not parsed. Candidate (24c) consists of two perfectly formed bisyllabic trochees, but violates ALL-FT-R in that the first of them does not stand in final position in the prosodic word. Finally, since candidate (24d) consists of a four-syllable feet, it violates FT-BIN, the constraint requiring feet to be binary.

As Piñeros (2000a) points out, there is also the need to explain the trochaic structure of Spanish hypocoristics. This can be formally captured by means of the interaction of FOOT-FORM(trochee) with FOOT-FORM(iambic).

(25) Foot-form constraints (based on McCarthy and Prince 1993)

FOOT-FORM(trochaic) — Align the left edge of a foot with the left edge of its head.

FOOT-FORM(iambic) — Align the right edge of a foot with the right edge of its head.

FOOT-FORM(trochaic) must dominate FOOT-FORM(iambic) for the desired candidate to win.[16]

(26) FOOT-FORM(trochaic) » FOOT-FORM(iambic)

[(σ‘σ)]	FOOT-FORM (trochaic)	FOOT-FORM (iambic)
a.☞[(‘σσ)]		*
b. [(σ‘σ)]	*!	

All the candidates in (26) above vacuously satisfied MAX(I-O) because there was no input-to-output mapping to be evaluated and therefore no violations of the said constraint. This is precisely what allows for unmarked truncated forms to emerge. However, if candidates were directly mapped from an underlying representation, truncation would cease to be optimal.

(27) MAX(I-O) » {FT-BIN; ALL-FT-R; PARSE-SYLL}

/CVCVCVCV/	MAX(I-O)	FT-BIN	ALL-FT-R	PARSE-SYLL
a. [(‘σσ)]	*!**			
b.☞[σσ(‘σσ)]				**
c.☞[(,σσ)(‘σσ)]			*	
d.☞[(‘σσσσ)]		*		

[16] There is general consensus in the literature that Spanish is a trochaic language. Roca (2006) argues for this view based on evidence by, among other phenomena, antepenultimate stress words (i.e. [i.(péɾ.βa).ton] ‘hyperbaton’), epenthesis/allomorphy in diminutive formation (i.e. /sol+ito/ → [(sò.le).(θí.to)] ‘sun.dim’), the pronunciation of certain household products of foreign origin (i.e. [kol.(ɣá.te)] ‘Colgate’) and the distribution of stress in acronyms (e.g. [(fi.fa)] ‘FIFA’. In addition, he draws evidence from truncation patterns themselves, both ordinary (*col*[é]*gio* → *c*[ó]*le* ‘school’) and hypocoristic (*Jos*[é] → *J*[ó]*se*). Moreover, Morales Front and Núñez Cedeño (1999) present a electronic examination of 91.000 terms which concludes that 88% of the Spanish words ending in a vowel (as the majority of Spanish words are) exhibit a paroxytone pattern. According to most analyses, this would indicate that they are trochaic (but cf. Roca 2006). See also Gibson (2011) for more arguments in favor of the unmarked trochaic foot in Spanish as suggested by first language acquisition and language games.

Candidate (27a) incurs at least three violations of MAX(I-O) (at most, only five of the eight underlying segments could be parsed into two syllables in Spanish). Which of the other three candidates (among many other possible ones) is to win will depend on the particular ranking of prosodic constraints of the given language. For tableau (9), the winning candidate in Spanish would typically be (27c).[17]

Nevertheless, while the proposed ranking "MAX(I-O) » prosodic word constraints » MAX(B-Trunc)" holds for most hypocoristics in Spanish, we have yet to deal with the problem of segmental and syllabic well-formedness. There is an Emergence of the Unmarked effect taking place in all Spanish truncated forms when it comes to prosodic word size but, while some forms tend to be segmentally and syllabically optimized, others are not, as the typology of the previous chapter illustrates. Whereas stress-anchored forms usually undergo a series of processes that aim at banning segmentally and syllabically marked structures, left anchored nicknames remain faithful to their inputs in this respect.

As McCarthy and Prince (1995) admit, there are clear cases where the reduplicant preserves input material that is lost in the base. Nevertheless, the transderivational model

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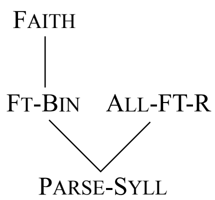
[17] The following ranking of prosodic constraints for Spanish non-verbal oxytone and paroxytone forms is based on Gibson (2011).

(n17.1) Constraint ranking for the prosodic structure of Spanish non-verbs



Nevertheless, this author makes a strange move when he affirms that "In [paroxytone] words […], in which trochaic stress emerges productively, FAITH-v° ["accented vowels must be stressed"] cannot in principle occupy an important position in the hierarchy since its effects are null in productive stress application" (2011:16-17). I do not see any justification for a constraint to be demoted for reason of it being vacuously satisfied, so I will regard FAITH as undominated in both paroxytones and oxytones.

As shown by the comparison of tableau (27) with the hierarchy proposed by Gibson, bisyllabic truncates require the structural constraints FT-BIN and PARSE-SYLL to emerge over faithfulness.

(n17.2)	Ranking for non-verbal non-truncates	{FT-BIN; PARSE-SYLL} » FAITH
	Ranking for truncated forms	FAITH » FT-BIN » PARSE-SYLL

developed by Benua (1995, 1997) regards templates as standing only in an output-to-output correspondence relation between base and truncate. According to her, truncated forms are transderived; i.e., they are derived through the base and blind to the input. The absence of a direct relation between truncated form and input entails that the truncated form can never be more faithful to the input than the base is, since the output reduplicant has no access to the input stem, except through the output base. However, many authors have challenged this view based on empirical evidence. E.g., Han (2006) raises an argument against this analysis by showing examples of truncated forms and words with secondary affixes which are derived directly from the Input in languages such as Tiberian Hebrew and Korean. Likewise, Lappe (2007) has explicitly proposed the use of input-to-truncate constraints to account for cases of nickname truncation.

Without going any further, there are several instances of English truncates that are more faithful to the input than to the base. One such case is the nickname *P*[æ]*t*. Everything indicates that it is not derived from the base form *P*[ə]*tricia* but from the input form *P*/æ/*tricia*. The truncated form must have access to the input, from which it draws its full vowel. The same input vowels is, on the other hand, reduced to schwa when mapped to the output form of the base. Ultimately, this means that truncation morphemes can stand in correspondence both with the input and the output of their base form.

(28) Correspondence theory of truncation (full model)

B-T Identity

Base → Truncated form

B-I Faithfulness ↑ ↗ *I-Trunc Faithfulness*

Input

Whereas the base-to-truncate mapping provides a convincing explanation for most stress-anchored forms, an input-to-truncate function seems to be required if we wish to account for certain characteristics of Spanish left-anchored hypocoristics. For instance, the left-anchored nickname form [bí.o] would be hard to account for if we considered it as mapped from a base form [bjo.lé.ta] ‘Violeta’ instead of an underlying form /bioleta/. Mappings like [bjo.lé.ta] →

[bí.o] show how left-anchored hypocoristics are not only blind to to the stress placement of the base form but to its syllabic structure as well. This is not surprising if we regard these forms as mapped from an underlying representation.

(29) Input-to-truncate correspondence

T [bí.o]
↑ *I-T Faithfulness*
I /bioleta/

In order to formalize the mapping of left-anchored hypocoristics from an underlying form, I will add a new faithfulness constraint MAX(Input-Trunc) to those already defined in (21).

(30) MAX(Input-Trunc) Every element in the input has a correspondent in the truncated form.

Therefore, input-to-truncated forms will be able to surface in their characteristic template form thanks to a constraint ranking equivalent to that expressed in (22) for base-to-truncate realizations.

(31) Emergence of the Unmarked effect in input-to-truncate forms

MAX(Input-Output) » prosodic word constraints » MAX(Input-Trunc)

The possibility of mapping from different input forms will provide an explanation for many of the bewildering asymmetries between left-anchored and stress-anchored Spanish hypocoristics, which have not yet been satisfactorily explained. One of these asymmetries is related to the degree of unfaithfulness that each type of nicknames can achieve with respect to their inputs. Apart from achieving prosodic unmarkedness, Stress-anchored hypocoristics can be also unmarked regarding segmental and syllabic implementation, as previously illustrated by the examples in §2.2. E.g., the male name *An*[s]*elmo* may become [tʃ]*emo*. The surface form of the name, which is faithfully anchored to the stress in base form, is, nevertheless, unfaithful regarding the mapping of the fricative segment ([s] → [tʃ). Furthermore, it deletes the lateral segment in order to achieve an unmarked syllable without a coda.

Left-anchored hypocoristics, on the other hand, are only unmarked at the prosodic level. This is the case not only with hypocoristic truncation but also with other kinds of left-anchored truncated forms; e.g., shortenings such as *prim*[é]*ro* → *prímer* 'first dibs'. *Prímer* is blind to input stress and insensitive to syllabic weight. In addition, it exhibits two instances of marked segments that are usually optimized or straightforwardly deleted in stress-anchored forms (the flaps), as well as some marked syllabic structures (a complex cluster and a coda). This form also differs from non-templatic truncates like *prim*[é]*ro* → *prim*[é]*r* 'first', which deletes the exact same segment but maintains the prosodic structure of the base form.

The challenge now is to account for all these differences within a single grammar. The discussed structural asymmetries (as well others regarding morphological affixation) will be accounted for in the next chapter as motivated by the different mappings of the each type of hypocoristics. The structural differences will be also discussed in the following sections and explained through the interaction of anchoring, faithfulness and markedness constraints.

Since this study is focused on bisyllabic forms, prosodic word constraints will be undominated in the grammars that evaluate all types hypocoristics forms. Now it is turn to address the differences that have to do with the constraints favoring syllabic and margin well-formedness.

First, I will deal with syllabic well-formedness; i.e. the attainment of an optimal CV.CV template. Some of constraints that conspire to obtain it are the following.

(32) Syllable well-formedness constraints (Piñeros 2000a)

*COMPLEX	No complex syllable margins. (Prince and Smolensky 1993/2004)
CODA-CONDITION	A coda cannot license place features. (Prince and Smolensky 1993/2004; Kager 1999)

The two constraints in (32) are proposed in Piñeros (2000a) analysis of Spanish truncation. CODA-CONDITION (CODA-COND) explains why nasals are the only consonants that may be kept in coda position in all kind of truncated forms. This is because, unlike the rest of Spanish consonants, nasals systematically assimilate to the place of articulation of the following obstruent (see Martínez-Gil 2014).[18]. CODA-COND is sometimes used in optimality-theoretic analyses of Spanish to explain coda neutralization (e.g. Abraha/m/ → Abraha[n]). However, in this work I will use a more restrictive interpretation of this constraint that also bans codas receiving a default place feature.

On the other hand, *COMPLEX elucidates why heterosyllabic clusters tend to disappear. Furthermore, I will posit the need for another syllabic well-formedness constraint banning onsetless syllable.

(33) ONSET Syllables must have onsets.
(Prince and Smolensky 1993/2004)

ONSET will be shown to play an important role in the analysis of reduplicative nicknames in §4.3.

Unlike stress-anchored truncates, left-anchored hypocoristics seldom undergo any syllabic changes. This is so because, in the grammar of left-anchored forms, the syllabic well-formedness constraints are ranked below Faithfulness(I-Trunc). This means that they share the

[18] With the only exception of [l], which assimilates to the place of articulation of the following coronal obstruent.

same constraint ranking with non-truncate forms regarding syllabic structure.[19] On the other hand, stress-anchored and reduplicative forms require the demotion of Faithfulness(I-Trunc) below some or all of the markedness constraints, as illustrated by the rankings in (34) below.

(34)	**Constraint ranking**	**Outcome**
	FAITH » {*COMPLEX; CODA-COND; ONSET}	Non-truncated forms/ left-anchored truncates
	{*COMPLEX; CODA-COND} » FAITH » ONSET	Optimized stress-anchored truncates
	{*COMPLEX; CODA-COND; ONSET} » FAITH	Reduplicative truncates

Optimized stress-anchored nicknames are the result of demoting FAITH below both *COMPLEX and CODA-COND. In addition to this re-ranking, reduplicative nicknames also show the demotion of FAITH below ONSET. The previous hierarchies will be formally justified and further explained later in Chapter 4 by means of an optimality-theoretic analysis of every hypocoristic type.

Throughout the analysis of the next chapter, I will be using the cover constraint SYLLABIC-WELL-FORMEDNESS (SYLL-WELL) to group the restrictions previously defined in (32) and (33).

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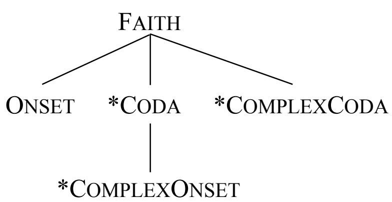
[19] Colina (2006) establishes the next ranking of constraints to explain the syllabification of Spanish forms.

(n19) Constraint ranking for the syllabic structure of Spanish



FAITH » *COMPLEXCODA makes coda clusters possible. *CODA » *COMPLEXONSET explains onset maximization; i.e., according to this ranking, /potɾo/ ‘young horse’ would be syllabified as [pó.tɾo] instead of [pót.ɾo]. FAITH » ONSET accounts for onsetless syllables.

4. **OT analysis**

The next sections will develop and optimality-theoretic analysis of Spanish hypocoristics from the perspective of the theoretical frameworks discussed in the previous chapter. §4.1, §4.2 and §4.3 will deal with the analyses of left-anchored, stress-anchored and reduplicative truncates, respectively. The analyses will be based on the idea that, while left-anchored forms are directly mapped from an underlying representation, stress-anchored and reduplicative nicknames are the product of a base-to-truncate and a truncate-reduplicant relation, respectively. §4.4 will be focused on explaining the consequences of each type of mapping on the morphology.

4.1. ***OT analysis of left-anchored forms***

In this section I will develop an optimality-theoretic account of left-anchored Spanish hypocoristics. For the reasons exposed in the introduction to this chapter, these forms will be analyzed as being directly mapped from an input form.

First, tableau (1) below will show that the interaction of prosodic word constraints applied in (27) in the previous chapter to some abstract input-to-output candidates also holds for real instances of input-to-truncate mapping.

(1) {FT-BIN; ALL-FT-R; PARSE-SYLL} » MAX(I-Trunc)

/espeɾanθ-a/ ‘Esperanza’	FT-BIN	ALL-FT-R	PARSE-SYLL	MAX (I-Trunc)
a.☞[(és.pe)]				*****
b. [(és.pe).ɾan̩.θ-a]			*!*	
c. [(ès.pe).(ɾán̩.θ-a)]		*!		
d. [(és.pe.ɾán̩.θ-a)]	*!			

In order to further discard a possible candidate [(es)] we must specify that the FT-BIN restriction at play applies only at a syllabic and not a moraic level.[20] In addition, we also need to discard other relevant candidates such as, [(pé.ɾa)], [(és.pa)], [(ráṇ.θ-a)], etc.

The abstract candidates in tableaux (27) in the previous chapter did not explicitly express the edge to what the candidates were being anchored. Nevertheless, a bisyllabic template deriving from a underlying form that consists of, e.g., eight segments could be the result of several anchoring combinations. Since one of the more salient characteristics of the type of truncates under discussion is precisely their anchoring to the left of the input form, we must find a way to express this fact in our analysis. The problem will be solved by positing an interaction of ANCHORING constraints.

ANCHORING constraints were originally introduced by McCarthy and Prince to regulate directionality effects in reduplication and later reformulated as constraints that require correspondents of peripheral segments to be similarly peripheral in some prosodic constituent. Since my theory posits that nicknames may be mapped from either base forms or underlying representations, we must thus define different categories of anchoring constraints for each kind of mapping. I will call the ANCHORING constraints that affect the input-to-truncate mapping ANCHOR-LEFT(I-Trunc) and ANCHOR-RIGHT(I-Trunc).

(2) Input-to-truncate edge-anchoring constraints

ANCHOR-LEFT(I-Trunc)	Align the left edge of the correspondent of TRUNC in the input with the left edge of the input. (based on Alber 2010)
ANCHOR-RIGHT(I-Trunc)	*Mutatis mutandis.*

[20] But cf. several instances of monosyllabic left-anchored nicknames that are binary at a moraic level instead, such as *Fernando → Fer* or *Cristina → Cris*. As previously stated, in this study the focus will be placed on bisyllabic truncation. The reader may consult Grau Sempere (2014) for a discussion on syllabic versus moraic binarity on Spanish truncated forms.

Nelson (1998, 2003) proposes to do without ANCHOR-RIGHT altogether. Instead, she argues for the use of EDGE-ANCHOR ("Each segment at each edge of the input must have a correspondent at the same edge in the truncate"). In her opinion, there is an inherent asymmetry in the grammar regarding faithfulness constraints across representations. She argues that anchoring constraints are Positional Faithfulness constraints, and that the asymmetry is grounded in the type of psycholinguistic privilege commonly associated with initial position. Nevertheless, the analysis of Spanish stress-anchored hypocoristics displayed in this next section will show the adequacy of employing the two edge-anchoring constraints independently.

Note that both ANCHORING constraints in (2) above are defined as alignment rather than faithfulness constraints. This definition, proposed by Alber (2010), is based on the observation that, in languages like Russian and Czech, left-anchored truncates bearing primary stress in the first syllable may render a truncated form which is not perfectly aligned to the left (and that, therefore, it is not stress-anchored either). We find instances of a similar phenomenon in Spanish mappings such as *Álvaro* → *Varo* or *Esper*[á]*nza* → *Pera.* The penultimate stressed form *Am*[é]*l*[j]*a* → *Meli* also serves to illustrate this process because, even though the resulting truncate may seem to be stress-anchored, the choice of deleting the nuclear vowel instead of the glide can only be explained as the effect of a left-anchoring constraint. Alber argues that, in cases like this, the domination of ONSET over ANCHOR-LEFT is the cause of the misalignment. As demonstrated by mappings such as *Esper*[á]*nza* → *Pera*, ANCHOR-LEFT, although dominated, can still play a role in the process of truncation.

I will start the prosodic analysis of left-anchored truncates by formally demonstrating the obvious fact that, in this forms, ANCHOR-LEFT(I-Trunc) dominates ANCHOR-RIGHT(I-Trunc).

(3) {PWR(ALL-FT-R); ANCHOR-LEFT(I-Trunc)} » ANCHOR-RIGHT(I-Trunc)

/esperanθ-a/ ‘Esperanza’	PWR (ALL-FT-R)	ANCHOR-LEFT (I-Trunc)	ANCHOR-RIGHT (I-Trunc)
a.☞[(és.pe)]			***** (ɾ, a, n, θ, a)
b. [(pé.ɾa)]		*!* (e, s)	*** (n, θ, a)
c. [(ɾán̥.θ-a)]		*!***(e, s, p, e)	
d. [(ès.pe).(ɾán̥.θa)]	*!		

Note than, in (3), the prosodic word restrictor interacts directly with the ANCHORING constraints. This differs from the analysis I have made so far in which I have followed the classical templatic analyses of McCarthy and Prince by opposing PWR to MAX. Authors like Alber (2010) are in favor of the markedness versus alignment analysis, while others like Lappe (2007) opt for the faithfulness versus markedness alternative. In the remaining of this section I will adopt the former approach without prejudice to the other since the typological consequences of both are still under study.

The next step will be to account for a possible, misaligned form [(pé.ɾa)]. This variant form is found in some dialects such as Mexican Spanish (Boyd-Bowman 1955, Gutiérrez 2009). As stated above, I will follow Alber and posit that this is due to the presence of an undominated constraint ONSET. Since ONSET does not generally occupy such a high position in standard Spanish left-anchored truncation (cf. *Esperanza → Espe*), I will regard the demotion of ANCHORING below this markedness constraint as a dialectal feature.

(4) ONSET » ANCHOR-LEFT(I-Trunc) » ANCHOR-RIGHT(I-Trunc)

/espeɾanθ-a/ ‘Esperanza’	ONSET	ANCHOR-LEFT (I-Trunc)	ANCHOR-RIGHT (I-Trunc)
a. [(és.pe)]	*!		***** (ɾ, a, n, θ, a)
b.☞[(pé.ɾa)]		** (e, s)	*** (n, θ, a)
c. [(ɾán̪.θ-a)]		***!*(e, s, p, e)	

Nelson (1998) also accounts for this kind of misalignments in French hypocoristics by postulating the domination of ONSET (e.g. *Elizabet<h>* → [za.bɛt]). Nevertheless, for this author there is not such thing as gradient ANCHORING constraints. Examples like *Esperanza* → *Pera*, however, show that it is possible for a truncated form to be anchored neither to the leftmost edge nor to the stressed syllable in the base form.

Since my proposal is that these forms are directly derived from an underlying representation, a constraint demanding correspondence between stress placement in the base and in the output form will generally be vacuously satisfied. Nevertheless, note that antepenultimate stressed names like *Verónica* must be lexically specified regarding stress placement because, otherwise, they would surface as default penultimate stressed words. Hence, mappings like *Verónica* → *Vero* show that ANCHOR-LEFT also dominates faithfulness to lexical stress.

Still, we need to account for a possible candidate [(és.p-a)] that manages to satisfy PWR, ANCHOR-LEFT(I-Trunc) and ANCHOR-RIGHT(I-Trunc) simultaneously. The constraint thwarting the chances of this candidate is CONTIGUITY(I-Trunc).

(5) CONTIGUITY(I-Trunc) — The portion of the input standing in correspondence forms a contiguous string, as does its correspondent portion in the truncate.[21]
(Based on McCarthy and Prince 1995 and Kager 1999)

[21] This definition of CONTIGUITY(I-Trunc) comprises both I-CONTIG (‘no skipping’) and O-CONTIG (‘no intrusion’) as distinguished by McCarthy and Prince (1995).

The domination of the faithfulness constraint CONTIGUITY(I-Trunc) Since the vowel marker is not realized in left-anchored hypocoristics, MAX(Affix) must be dominated by CONTIGUITY(I-Trunc).

(6) CONTIGUITY(I-Trunc) » ANCHOR-RIGHT(I-Trunc)

/espeɾanθ-a₁/ 'Esperanza'	CONTIGUITY (I-Trunc)	ANCHOR-RIGHT (I-Trunc)
a.☞[(és.pe)]		***** (ɾ, a, n, θ, a)
b. [(és.p-a₁)]	*!**** (e, ɾ, a, n, θ)	

Finally, the trochaic form of the optimal candidate must also be accounted for. This will be achieved by means of the interaction of the foot-form constraints discussed in (25) in the previous chapter.

(7) FOOT-FORM(trochaic) » FOOT-FORM(iambic)

/espeɾanθ-a/ 'Esperanza'	FOOT-FORM (trochaic)	FOOT-FORM (iambic)
a.☞[(és.pe)]		*
b. [(es.pé)]	*!	

So far I have established the following constraint rankings for stress-anchored hypocoristics regarding prosodic form.

(8) {FT-BIN; ALL-FT-R; PARSE-SYLL} » ANCHOR-RIGHT(I-Trunc)

ANCHOR-LEFT(I-Trunc)} » ANCHOR-RIGHT(I-Trunc)

CONTIGUITY(I-Trunc) » ANCHOR-RIGHT(I-Trunc)

FOOT-FORM(trochaic) » FOOT-FORM(iambic)

We have seen that left-anchored hypocoristics are affected by the prosodic constraints that contribute to the formation of CV templates. ANCHOR-RIGHT(I-Trunc) must be dominated by the Prosodic Word Restrictor constraints, FT-BIN, ALL-FT-R and PARSE-SYLL, for any kind of bisyllabic truncation to take place. On the other hand, left-anchored nicknames differ from the other two types of truncation in that they seldom undergo any segmental or syllabic changes. The reason for this is found in the domination of ANCHOR-RIGHT(I-Trunc) over the syllabic and margin well-formedness constraints defined in (32) and (33) in the previous chapter.

First, the interaction between ANCHOR-RIGHT(I-Trunc) and CODA-CONDITION will help us elucidate why the deletion of input segments on truncated forms, although tolerated in order to satisfy the prosodic word constraints, is not a possible way to fulfill SYLL-WELL.

(9) ANCHOR-RIGHT(I-Trunc) » SYLL-WELL(CODA-COND)

/agustin/ 'Agustín'	ANCHOR-R (I-Trunc)	SYLL-WELL (CODA-COND)
a.☞[(á.ɣ̞us)]	***	*
b. [(á.ɣ̞u)]	****!	

The [s] in the winner candidate (9a) causes a violation of CODA-COND because it licenses a place feature in coda position. The loser candidate (9b) satisfies CODA-COND, but it does so at the expense of incurring a fatal violation of ANCHOR-RIGHT(I-Trunc) with respect to their optimal output. The result of the ranking in (9) is that the deletion of admissible final codas is not tolerated in left-anchored forms. Another possible candidate, [(á.ɣ̞ust)], would be ruled out by the syllabic well-formedness constraint *COMPLEX.

Next, the following tableau will demonstrate that CONTIGUITY(I-Trunc) is higher-ranking than CODA-COND, *COMPLEX and ONSET.

(10) CONTIGUITY(I-Trunc) » SYLL-WELL(*COMPLEX; CODA-COND; ONSET)

		CONTIGUITY (I-Trunc)	SYLL-WELL
/kustodio/ 'Custodio'	a.☞[(kús.to)]		* (CODA-COND)
	b. [(kú.to)]	*! (s)	
/franθisko/ 'Francisco'	a.☞[(fráṇ.θis)]		* (*COMPLEX)
	b. [(fáṇ.θis)]	*! (ɾ)	
/leopoldo/ 'Leopoldo'	a.☞[(lé.o)]		* (ONSET)
	b. [(lé.j̞o)]	*! (j̞)	

The process taking place in /kustodio/ → [(kús.to)] is similar to the one just described in (9). The difference is that the domination of CONTIGUITY(I-Trunc) over markedness results in the preservation of *medial* codas. The deletion of the coda in the second syllable of the optimal candidate is due to the general restrictions that the grammar of the language imposes to both truncated and non-truncated forms alike. A candidate *[(kús.toð̞)] would be ruled out in most varieties of Spanish due to a ban against coda stops and their approximant allophones.

As for /franθisko/ → [(fráṇ.θis)], the deletion of the flap segment in the loser candidate prevents the continuous string in the input from being faithfully mapped. The optimal candidate is allowed to exhibit a complex onset because the constraint banning such marked structures, *COMPLEX, is lower ranking with respect to faithfulness.

Since the definition of CONTIGUITY(I-Trunc) given in (5) accounts for both skipping and intrusion of segments, the interaction in (10) also explains why epenthesis is not a permitted strategy to avoid medial onsetless syllables. Initial epenthesis is not documented in left-anchored hypocoristics either, so ONSET must be dominated by ANCHOR-LEFT(I-Trunc) as well.

(11) ANCHOR-LEFT(I-Trunc) » SYLL-WELL(ONSET)

/eduardo/ 'Eduardo'	ANCHOR-LEFT (I-Trunc)	SYLL-WELL (ONSET)
a.☞[(é.ð̞u)]		*
b. [(d̲-é.ð̞u)]	*! (d)	

Candidate (11a) violates the structural constraint demanding an onset in every syllable. Candidate (11b) insert an epenthetic consonant in order to solve this, but, in doing so, it commits a fatal violation of ANCHOR-LEFT(I-Trunc).

Finally, we need to address the phenomenon of coalescence. In §2.2 we saw that one of the strategies for stress-anchored forms to avoid complex clusters is to fusion a coronal consonant with the [−anterior] feature of the next vocoid, thus rendering a palatal sound (e.g. *Anto*[nj]*o* → *To*[ɲ]*o*). To explain this fusion, I will make use of another faithfulness constraint, UNIFORMITY(I-Trunc).

(12) UNIFORMITY(I-Trunc) No element of the truncated form has multiple correspondents in the input.
(Based on McCarthy and Prince 1995)

Since coalescence is not observed in left-anchored forms, UNIFORMITY(I-Trunc) must dominate SYLL-WELL(COMPLEX).

(13) UNIFORMITY(I-Trunc) » SYLL-WELL(COMPLEX)

/d$_1$i$_2$onisio/ 'Dionisio'	UNIFORMITY (I-Trunc)	SYLL-WELL (COMPLEX)
a.☞[(d$_1$j$_2$ó.ni)]		*
b. [(ɟ̯j$_{12}$ó.ni)]	*!	

Candidate (13a) transforms the first two segments in the input into a cluster formed by a [anterior] coronal consonant an a [−anterior] vocoid, which causes a violation of COMPLEX. Candidate (13b) does not have a cluster because it coalesces the two segments into a voiced palatal (in a similar way as stress-anchored forms do; e.g, *Clau*[dj]o → *Ca*[ɟ]*o*). Nevertheless, (13b) incurs a fatal violation of UNIFORMITY(I-Trunc), the constraint banning elements in the truncate with multiple correspondents in the input.

The interaction of syllabic well-formedness and Faithfulness(I-Trunc) constraints discussed so far can be summed up in the following list.

(14) Syllabic well-formedness in left-anchored forms

Constraint ranking	**Outcome**
ANCHOR-RIGHT(I-Trunc) » CODA-COND	Final codas allowed
CONTIGUITY(I-Trunc) » CODA-COND	Medial codas allowed
CONTIGUITY(I-Trunc) » *COMPLEX	Complex onsets allowed
CONTIGUITY(I-Trunc) » ONSET	Medial onsetless syllables allowed
ANCHOR-LEFT(I-Trunc) » ONSET	Initial onsetless syllables allowed
UNIFORMITY(I-Trunc) » *COMPLEX	No coalescence

Finally, we can establish a constraint ranking for left-anchored forms regarding the interaction of faithfulness with syllabic and prosodic markedness.

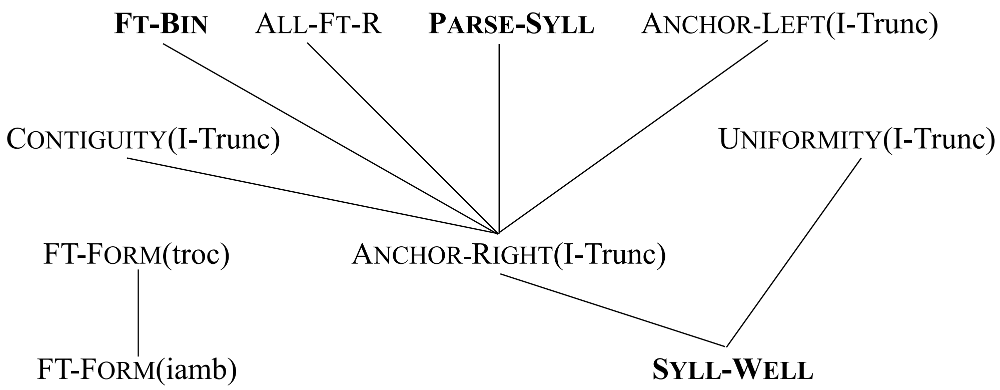
(15) {FT-BIN; ALL-FT-R; PARSE-SYLL; ANCHOR-LEFT(I-Trunc); CONTIGUITY(I-Trunc) » » ANCHOR-RIGHT(I-Trunc)

FOOT-FORM(trochaic) » FOOT-FORM(iambic)

{ANCHOR-RIGHT(I-Trunc); ANCHOR-LEFT(I-Trunc); UNIFORMITY(I-Trunc); CONTIGUITY(I-Trunc)} » SYLL-WELL

The following Hasse diagram will offer a schematic view of the interaction of the constraints intervening in (15) above.

(16) Constraint ranking for left-anchored truncation



In (16) above, the structural constraints have been boldfaced for ease of identification. As the diagram shows, the margin and syllabic well-formedness constraints under discussion must be dominated by both Faithfulness(I-Trunc) and Anchor(I-Trunc) in left-anchored forms. This is a crucial difference with respect to stress-anchored nicknames, as the the analysis in the following section will unfold.

The next step will be to account for the fact that left-anchored hypocoristics remain segmentally faithful to their inputs. At this point, a constraint that preserves input-to-truncate featural identity will be necessary.

(17) IDENT(I-Trunc) Correspondent segments in the input and in the truncated form have identical values for feature [F].

To illustrate the high-ranking of IDENT(I-Trunc) in left-anchored forms, the following tableau will show how IDENT([continuant])(I-Trunc) dominates *M/[continuant].

(18) IDENT([continuant])(I-Trunc) » *M/[continuant]

/alfonso/ 'Alfonso'	IDENT([cont]) (I-Trunc)	*M/[continuant]
a.☞[(ál.fon)]		* (f)
b. [(ál.pon)]	*! (p)	

Candidate (18a) has a fricative segment [f], which, is not allowed neither in stress-anchored nor in reduplicative nicknames. In §2.2 we saw that a restriction against this natural class of segments can force the optimization of fricatives into a stops by losing their feature [continuant] (as it is fact the case with the stress-anchored variant of this nickname: *Al*[f]*onso* → [p]*oncho*). However, such optimization of [f] into [p] would incur a fatal violation of IDENT(I-Trunc), as the defeat of candidate (18b) demonstrates.

I will not go into details with every possible interaction of IDENT(I-Trunc) with the positional markedness constraints *M/[F] since the topic of segmental optimization will be thoroughly dealt with in the next two sections. Since left-anchored truncates allow for the same kind of segments in onset position as non-truncated forms, the hierarchy displayed in (14) in the previous section for Spanish will be adapted to express the margin requisites of input-to-truncate realizations.

(19) Constraint ranking of Spanish stress-anchored truncation

IDENT(I-Trunc) » {*M/[cont]; *M/[rhotic]} » {*M/[voi]&[lab]); *M/([voi]&[dor]); *M/([voi]&[nas])} » *M/[liq] » *M/([−ant]&[voi]) » *M/[voi] » *M/([nas]&[lab]) » » *M/[−ant] » *M/[dor] » *M/[lab] » *M/[nas]

Before putting an end to the analysis, another issue regarding segmental transformations must be addressed. In §2.1 some variant forms of certain stress-anchored hypocoristics showed an apparently unmotivated process of palatalization. This process was all the more unexpected in that it was not accompanied by any other process of syllabic or segmental optimization. E.g. *Mer*[θ]*edes* → *Mer*[tʃ]*e* shows the palatalization of [θ] but, nevertheless, it retains a highly marked rhotic coda. Likewise, [s]*ofía* → [tʃ]*ofi* undergoes the change of the coronal fricative into [tʃ], while the labial fricative remains unaltered.

I propose that these are instances of what I have referred to as expressive palatalization in the previous chapter. Following Kochetov and Alderete (2011), I will name the constraint triggering this semantic process EXPRESSIVEPALATALIZATIONICONICITY (EPALICON).

(20) EPALICON(I-Trunc) For mappings from input to truncate in which an iconic relationship between phonological structure and denotations of smallness/childishness is established, every coronal fricative in the base must correspond to a [−anterior] segment in the truncate.
(based on Kochetov and Alderete 2011)

"Coronal fricative" in (20) above means neither [labial], [dorsal], [nasal] nor [voiced]. This view of expressive palatalization is crucially different from phonological palatalization because it is defined on correspondence relations rather than markedness.

A constraint prohibiting the insertion of floating [−anterior] features must then interact with EPALICON(I-Trunc).

(21) DEP([−ant])(I-Trunc) Every feature [−anterior] in the truncated form has a correspondent in the input.

Therefore, for expressive palatalization to happen, EPALICON(I-Trunc) must dominate DEP([−anterior])(I-Trunc).

(22) {*M/[continuant]; EPALICON(I-Trunc)} » DEP([−anterior])(I-Trunc)

		EPALICON (I-Trunc)	DEP([−anterior]) (I-Trunc)
[meɾ.(θé.ð̞es)] 'Mercedes'	a.☞[(méɾ.tʃe)		* (tʃ)
	b. [(méɾ.θe)	*! (θ → θ)	
[so.(fí.a)] 'Sofía'	a.☞[(tʃó.fi)]		* (tʃ)
	b. [(só.fi)]	*! (s → s)	

Candidates (22a) incur a violation of DEP([−anterior])(I-Trunc) because their voiceless palatal segments bear a feature [−anterior] that has no correspondent in the base form. Candidates (22b) do not have this problem but they fatally violate EPALICON(I-Trunc) because they have two fricative segments that are not mapped into palatals.

4.2. *OT analysis of stress-anchored forms*

Now is the turn to develop an optimality-theoretic account of stress-anchored hypocoristics. Following the arguments exposed in the introduction to this chapter, these forms will be analyzed as being mapped from an base form. As it was the case with left-anchored hypocoristics, stress-anchored nicknames also satisfy the Prosodic Word Restrictor defined in (23) in the previous chapter. The following tableau shows how the three prosodic word constraints dominate MAX(B-Trunc) by using stress-anchored candidates mapped from an actual base form.

(23) {FT-BIN; ALL-FT-R; PARSE-SYLL} » MAX(B-Trunc)

[(à.nas).(tá.sjo)] 'Anastasio'	FT-BIN	ALL-FT-R	PARSE-SYLL	MAX (B-Trunc)
a.☞[(tá.tʃo)]				****
b. [a.nas.(tá.sjo)]			*!*	
c. [(à.nas).(tá.sjo)]		*!		
d. [(á.nas.ta.sjo)]	*!			

There is still the need to discard other relevant candidates not appearing in tableau (22), such as [(á.nas), [(nás.ta)] or [(á.sjo)]. To do this I will again recur to the use of ANCHORING constraints.

We have seen that the most salient characteristic of stress-anchored forms is the fact that they must preserve the stressed feet of the base form, I will now proceed to formally demonstrated this observation. In the previous section the two anchoring constraints required for an input-to-truncate analysis were defined; now I will do the same with the constraints involved in the anchoring of base-to-truncate forms.

(24) Base-to-truncate edge-anchoring constraints

ANCHOR-LEFT(B-Trunc)	Align the left edge of the correspondent of Trunc in the base with the left edge of the base. (based on Alber 2010)
ANCHOR-RIGHT(B-Trunc)	*Mutatis mutandis*.

In order to capture the fact that stress-anchored forms are stress-driven, we must add a further anchoring constraint with no input-to-truncate equivalent. For this purpose, Piñeros (2000b) makes use of HEAD-MAXIMIZE (HEAD-MAX).

(25) HEAD-MAX(B-Trunc) — Every element contained in a prosodic head in the base must have a correspondent in the truncate. (Based on Alderete 1999)

The effect of HEAD-MAX in Piñeros's analysis is to preserve all the segments parsed under the main-stressed foot of the base. Nevertheless, some authors like Roca (2006) consider the vowel as the Spanish metrical atom. According to this view, it is vowels, and not syllables, that are the stress bearers in the language. This insight can be captured by an anchoring constraint called ANCHOR-STRESS.

(26) ANCHOR-STRESS — The stress peak of the truncated form must correspond to the stress peak of the base. (Alber 2010)

ANCHOR-STRESS is used by Alber (2010) in her analysis of Italian truncation. This constraint demands not only that the stressed vowel of the base be preserved but that it must be preserved as stressed, which is exactly what happens in all the cases of stress-anchored truncation in Spanish. Alber also points at the cross-linguistic observation that alignment has no effect on stress-anchored truncates. On the other hand, as the previous section has shown, ANCHOR-LEFT may be gradually violated in languages like Spanish. Therefore, she concludes, whereas ANCHORING should be rather included within the family of alignment constraints, ANCHOR-STRESS can be regarded as a faithfulness constraint by all standards. For these reasons, I will use be using ANCHOR-STRESS in the present analysis.

The following tableau shows the ranking obtained through the interaction of the anchoring restrictions defined in (24) and (26) above.

(27) {PWR(PARSE-SYLL); ANCHOR-STRESS} » ANCHOR-LEFT(B-Trunc)

[(à.nas).(tá.sjo)] 'Anastasio'	PWR (PARSE-SYLL)	ANCHOR-STRESS	ANCHOR-LEFT (B-Trunc)
a.☞[(tá.sjo)]			* (i)
b. [(á.nas)]		*!	
c. [(à.nas)(tá.sjo)]	*!*		

The ranking in (27) differs from Nelson's (1998, 2003) proposal for French hypocoristics according to which ANCHOR-LEFT must dominate ANCHOR-STRESS in both left-anchored and stress-anchored forms. She sustains this idea on the basis that, in French, stress-anchoring truncation is only observed as an alternative hypocoristic form in order to avoid onsetless syllables, while non-hypocoristic forms do not allow it altogether. As explained in the previous chapter, non-hypocoristic forms do not allow stress-anchoring in Spanish either. Left-anchored truncates like *bicicl*[é]*ta* → *bici* 'bike' do not have any variant stress-anchored form, either structurally optimized (e.g. **keta*) or not (e.g. **cleta*). Likewise, in the previous section we saw that, in Spanish, ANCHOR-LEFT(I-Trunc) dominates a constraint demanding faithfulness to stress specification in the base form. Such a interaction explained mappings like /beɾónika/ → [bé.ɾo].

Nevertheless, since I have decided to adopt Alber's reinterpretation of edge anchoring constraints as alignment constraints in order to explain left-anchored misalignment, Nelson's does not apply to my analysis. The base-to-truncate version of ANCHOR-LEFT must, therefore, dominate ANCHOR-STRESS, as the interaction in the following tableau makes evident.

(28) {ONSET; ANCHOR-LEFT(B-Trunc), ANCHOR-RIGHT(B-Trunc)} » ANCHOR-STRESS

[(à.nas).(tá.sjo)] ‘Anastasio’	ONSET	ANCHOR-STRESS	ANCHOR-RIGHT (B-Trunc)	ANCHOR-LEFT (B-Trunc)
a.☞[(tá.sjo)]				**** (a, n, a, s)
b. [(nás.ta)]		*!	*** (s, j, o)	* (a)

We have yet to discard another possible candidates that fail at satisfying the constraints demanded by stress-anchoring. As illustrated by the data in §2.2, stress-anchored forms derived from antepenultimate stressed base forms must satisfy both STRESS-ANCHOR and ANCHOR-RIGHT(B-Trunc). That these forms are stress-anchored rather than left-anchored becomes evident when we observe that they undergo all the expected segmental optimizations characteristic of this type of truncation *Lá*[θ]*ar-o* → *La*[tʃ]*-o*; *Plá*[θ]*id-o* → *Pa*[tʃ]*-o*; *Tránsito* → *Tan*[tʃ]*o*. In addition, there are several examples of nicknames exhibiting the same pattern without optimization, as Hipólito → Polo or Mónica → Mona. Cf. the left-anchored variant form of this truncations: *Placi*, *Transi*, *<H>ipo~Poli* and *Moni*. The grammar of these nicknames, therefore, differs from the grammar of left-anchored forms in that CONTIGUITY(B-Trunc) has been demoted below ANCHOR-RIGHT(B-Trunc).

(29) ANCHOR-RIGHT(B-Trunc) » CONTIGUITY(B-Trunc)

[i$_1$.(pó$_2$.li$_3$).t-o$_4$] ‘Hipólito’	ANCHOR-RIGHT (B-Trunc)	CONTIGUITY (B-Trunc)
a.☞[(pó$_2$.l-o$_4$)]		* (i, t)
b. [(pó$_2$.li$_3$)]	*!	

This ranking must be attributed to the perceptual salience of stressed and final vowels. The phenomenon is also reflected in the Spanish poetical tradition, in which the vowel in the penultimate syllable of an proparoxytone word is, generally, not taken into consideration for the rhyme; only the stressed and final vowels count. Eg. the last stanza of Juan Ramón Jiménez’s poem “El viaje definitivo” [“The definitive travel”] rhymes ***á**rb**o**l* ‘tree’, *bl**a**nc**o*** ‘white’, *pl**á**cid**o*** ‘placid’ and *cant**a**nd**o*** ‘singing’ (*Poemas agrestes* [*Country Poems*] 1910-1911). Input-to-truncate forms, being derived from underlying representations, are, for obvious reasons, not affected by this perceptual traits and place, by default, both ANCHOR-STRESS and ANCHOR-RIGHT in a lower position in the hierarchy.

Nevertheless, other candidates comes easily to mind that would tie with [(pó$_2$.lo$_4$)] with regards to the interactions discussed so far. An hypothetical candidate [(pó$_2$.to$_4$)] would be one of them. This problem can be solved if we interpret the notion of “prosodic peak” used in the definition of ANCHOR-STRESS to refer to the entire stressed foot. If this version of ANCHOR-STRESS is dominated by ANCHOR-RIGHT(B-Trunc), the desired candidate will beat the wrong ones.

(30) ANCHOR-RIGHT(B-Trunc) » ANCHOR-STRESS(B-Trunc)

[i$_1$.(pó$_2$.li$_3$).t-o$_4$] ‘Hipólito’	ANCHOR-RIGHT (B-Trunc)	ANCHOR-STRESS
a.☞[(pó$_2$.l-o$_4$)]		* (i$_3$)
b. [(pó$_2$.t-o$_4$)]		**! (l, i$_3$)
c. [(pó$_2$.li$_3$)]	*!* (t, o$_4$)	

The interaction in (30) obtains the desired result by preserving as many elements of the stressed foot in the optimal candidate as possible while still satisfying ANCHOR-RIGHT(B-Trunc). Note, however, that some of the data regarding reduplicative nicknames that will be discussed in the next section suggests that such an ordering may not apply to all truncates. Since there are not plenty of instances of truncated proparoxytone names that could be unequivocally classified as stress-anchored and this is not a key issue for my present purposes, I leave the questions of what constraints are exactly involved this kind of anchoring interactions and of their possible rerankings open to further analysis.

Finally, it must be noted that any hypothetical mapping [i$_1$.(pó$_2$.li$_3$).to$_4$] → [(i$_1$.pó$_2$)], which satisfies both ANCHOR-LEFT and ANCHOR-STRESS, will always be ruled out by the domination of the constraint FT-FORM(trochaic) over FORM(iambic).[22]

(31) FOOT-FORM(trochaic) » FOOT-FORM(iambic)

[i$_1$.(pó$_2$.li$_3$).to$_4$] 'Hipólito'	FOOT-FORM (trochaic)	FOOT-FORM (iambic)
a.☞[(pó$_2$.li$_3$)]		*
b. [(i$_1$.pó$_2$)]	*!	

We can thus establish the following constraint ranking for stress-anchored forms regarding prosodic form.

(32) {FT-BIN; ALL-FT-R; PARSE-SYLL} » ANCHOR-RIGHT(B-Trunc)

{ANCHOR-STRESS; ANCHOR-RIGHT} » ANCHOR-LEFT(B-Trunc)

ANCHOR-RIGHT(B-Trunc) » CONTIGUITY(B-Trunc)

FOOT-FORM(trochaic) » FOOT-FORM(iambic)

Unlike left-anchored forms, which only need to satisfy the prosodic word and foot-form constraints, stress-anchored hypocoristics usually undergo a series of structural changes that

22 I should also mention that *Lito* is a documented nickname for *Hipólito* as well. However, I do not consider that this is an instance of right-anchoring but that, instead, it is derived from the form *Pol*[í]*to*, which is, in turn, a left-anchored trisyllabic nickname that has become misaligned in order to avoid a violation of ONSET. The way trisyllabic forms conform to the default trochaic foot is by bearing stress in the penultimate syllable, as *Pol*[í]*to* does. Cf. other trisyllabic truncates like *manifestación* → *ma.n*[í].*f-a* 'demonstration'.

tend toward an unmarked CV.CV template.[23] In (32) and (33) in the previous chapter I defined the constraints that force these processes (*COMPLEX, CODA-CONDITION and ONSET) and conjoined the first two of them in a cover constraint I dubbed SYLL-WELL. Due to the particular interactions of stress-anchored forms, in this chapter I will separate ONSET from SYLL-WELL and refer to the conjunction of the remaining two constraints as as SYLL-WELL'.

The three aforementioned constraints will need to interact with a series of restrictions on faithfulness in order to establish the final ranking for stress-anchored forms. Apart from the already defined base-to-truncate anchoring constraints, the following faithfulness restrictions will be also at play (Based on McCarthy and Prince 1995 and Kager 1999).

(33)	CONTIGUITY(B-Trunc)	The portion of the input standing in correspondence forms a contiguous string, as does its correspondent portion in the truncate.
	UNIFORMITY(B-Trunc)	No element of the truncated form has multiple correspondents in the base.
	IDENT(B-Trunc)	Correspondent segments in the base and in the truncated form have identical values for feature [F].

First, CODA-COND must dominate ANCHOR-RIGHT(B-Trunc) to account for the deletion of syllabic codas in stress-anchored truncates. Finding a good example for the deletion of final codas faces some difficulties due to the prosodic restrictions of Spanish, which disfavors three-syllabe (ante)penultimate stressed words ending in a heavy syllable. The few penultimate stressed bisyllabic names that end in a heavy syllable usually undergo a reinterpretation of their final vowel and its subsequent consonant as a plural morpheme,

23 As illustrated by the data in §2.2, in some cases, the optimization of stress-anchored forms is optional (e.g. *Anastasio → Tasio~Tacho*). While the reasons for this variation will be explored in chapter 5, the remaining of this section will be focusing on the the instances of syllabic and segmental optimization that make stress-anchored forms differ from left-anchored ones.

which is substituted by a gender marker after optimization takes place (e.g., *Gertrud-is* → *Tul-a*, *Dolor-es* → *Ló-la*). In addition, final-stressed nicknames also tend to add a gender marker and transform their codas into the onset of their final syllable (e.g., *Manuel* → *Nel-o*; *Jesús* → *Chúch-o*).[24] Therefore, although ambiguous from the point of view of anchoring, I will be forced to use a penultimate stressed bisyllabic name in order to show an instance of final coda deletion.

(34) SYLL-WELL'(CODA-COND) » ANCHOR-RIGHT(B-Trunc)

[(bík.toɾ)] 'Víctor'	SYLL-WELL' (CODA-COND)	ANCHOR-RIGHT (B-Trunc)
a.☞[(bí.to)]		* (ɾ)
b. [(bík.toɾ)]	*!*	

Candidate (34a) deletes both the velar stop coda in the first syllable and the final flap causing one violations of ANCHOR-RIGHT(B-Trunc). Candidate (34b) maintains the marked segments but it is disqualified because it licenses a place feature in coda position.

The winning candidate contrasts with other bisyllabic forms that are clearly left-anchored, such as *Jes*[ú]*s* → *J*[é]*sus*, which is allowed to maintain the highly marked fricative coda. As the optimal candidate (34a) illustrates, not only does CODA-COND dominate ANCHOR-RIGHT(B-Trunc) but also CONTIGUITY(B-Trunc).

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[24] Stress-anchored monosyllabic nicknames present an exception to this behavior in that they must retain the final coda to achieve bimoracity (e.g. *Jesús* → *Chus*).

(35) SYLL-WELL'(CODA-COND; *COMPLEX) » CONTIGUITY(B-Trunc)

		SYLL-WELL'	CONTIGUITY (B-Trunc)
[al.(βéɾ.to)] 'Alberto'	a.☞[(bé.to)]		* (ɾ)
	b. [(béɾ.to)]	*! (CODA-COND)	
[ma.(nwé.la)] 'Manuela'	a.☞[(né.la)]		* (w)
	b. [(nwé.la)]	*! (*COMPLEX)	

All medial codas other than nasals may be deleted. Nevertheless, it is also possible to have non-optimized mappings such as *Alberto → Berto* and *Ernesto →Nesto*. The reasons for the existence of such alternative nicknames will be addressed in chapter 5.

*COMPLEX need dominate CONTIGUITY(B-Trunc) as well since complex onsets undergo the deletion of the less sonorous segment of the cluster in order to become optimal. The optimal candidate [ma.(nwé.la)] → [(né.la)] incurs a violation of CONTIGUITY(B-Trunc) because it deletes the back glide in the base in order to achieve an optimal onset. The loser candidate maintains this segment at the cost of forming a complex onset which fatally violates *COMPLEX. As examples like *Al*[fr]*edo* → [p]*eyo* illustrate, deletion of the more sonorous segment and optimization of the remaining one can also take place simultaneously.

While deletion is a common way to achieve optimal structures in stress-anchored truncates, epenthesis is much more less common. We have seen that gender marker augmentation is sometimes used as a way to obtain a bisyllabic nickname out of a final-stressed base. Nevertheless, this addition cannot be regarded as epenthetic. As we saw earlier in this chaper, while *Nel-o* is a common nickname of the male name *Manuel*, **Nel-e* is not documented in any dialect. The reason for this is that Spanish gender markers are -*o* for masculine names and -*a* for feminine ones, while -*e* is universally held as the default epenthetic vowel in the language.[25]

There are, however, a few instances of what could be considered insertion of an epenthetic consonant in order to avoid an onsetless syllable, such as *Elis*[é.o] → *Ch*[é.j̯o], in

[25] See Colina (2009: 101-133) for an optimality-theoretic analysis of *e*-epenthesis in Spanish.

which the added palatal segment helps create an onset for the last syllable. Nevertheless, examples like this are very unusual and, most of the time, no onset repair strategy takes place.

(36) CONTIGUITY(B-Trunc) » ONSET

[ro.(θí.o)] 'Rocío'	CONTIGUITY (B-Trunc)	ONSET
a.☞[(tʃí.o)]		*
b. [(tʃí.j̹o)]	*! (j̹)	

Likewise, initial epenthesis is not a possible way to avoid onsetless words. This means that ANCHOR-LEFT(B-Trunc) dominates ONSET in the grammar of stress-anchored truncates.

(37) ANCHOR-LEFT(B-Trunc) » ONSET

[(á.na)] 'Ana'	ANCHOR-LEFT (B-Trunc)	ONSET
a.☞[(á.na)]		*
b. [(tʃá.na)]	*!	

On the other hand, onsetless bisyllabic names do not usually undergo any kind of syllabic or segmental optimization that may indicate that they are mapped from an output instead of an input (e.g., *Olga* →**Oga*; *Elsa* → **Echa*). As we will see in the next section, the way to obtain a structurally unmarked truncate out of this kind of names is to resort to reduplication (e.g., *Olga* → *Coca*; *Ana* → *Nana*). Nevertheless, this section has shown that, sometimes, resorting to stress-anchoring becomes a strategy to avoid onsetless syllables in itself since many vowel-initial names have an onset in the syllable bearing the main stress (e.g., *Ant*[ó]*nio* → *Toño*, *Alf*[ó]*nso* → *Poncho*, *Emilia* → *Mila*, *Isab*[é]*l* → *Bel-a*).

Next, *COMPLEX will be shown to also dominate UNIFORMITY(B-Trunc), at least in most varieties of stressed-anchored nicknames.

(38) SYLL-WELL'(*COMPLEX) » UNIFORMITY(B-Trunc)

[an.(tó.n1j2o)] 'Antonio'	SYLL-WELL' (*COMPLEX)	UNIFORMITY (B-Trunc)
a.☞[(tó.ɲ12o)]		*
b. [(tó.n1j2o)]	*!	

Candidate (38a) violates UNIFORMITY(B-Trunc) because it exhibits a palatal nasal segment with multiple correspondents in the base form. Candidate (38b) is faithful to the base in that respect, but at the cost of fatally violating *COMPLEX.

Stress-anchored palatalization can only take place if one of the segments is a coronal consonant and the other is a [−anterior] vocoid. In autosegmental terms, the coronal segment is linked (assimilated) to the place feature of the vocoid, which in turns causes the delinking of the place feature of the coronal (if it has a place feature at all). The possible segmental changes due to palatalization in stress-anchored and reduplicative forms are summarized in the following list.

(39) Segmental changes due to coalescence

Base form		**Truncated form**
nj	→	ɲ
tj	→	tʃ
lj	→	ɟʝ/ʝ̞
ɾj	→	ɟʝ/ʝ̞
dj/ð̞j	→	ɟʝ/ʝ̞

The contrastive hierarchy displayed in (13) in the previous chapter posits that [n] is underspecified in Spanish regarding its place feature. This means that [n] only needs to assimilate the [−anterior] feature of [j] to transform into the [−anterior] nasal segment [ɲ]. In the same context, the absolute unmarked segment [t] transforms into the [−anterior] coronal segment [tʃ] (e.g. *San*[tj]*ago* → [tʃ]*ago*). Similarly, the default voiced segments [d]/[ð̞] change into the voiced [−anterior] coronal (e.g. *Clau*[ð̞j]*o* → *Ca*[j̞]*o*). Neither [t] nor [l]/[ð̞] are allowed to transform into some dental palatal sounds because such segments are not part of the inventory of Spanish.

As for the palatalization of the liquid segments, it requires some further explanation. For the lateral segment to palatalize (e.g. *Emi*[lj]*o* → *Mi*[j̞]*o*), the place feature [liquid] must be delinked. Again, this is so because dental palatals are not allowed in Spanish.[26] Likewise, the prohibition against palatal rhotics in Spanish forces the feature [liquid] of [ɾ] to be delinked when this segment assimilates to the place feature of a following [−anterior] glide (I am assuming that [rhotic] is dependent of the node [liquid] in an autosegmental representation). Therefore, for these kinds of palatalization to take place, the domination of IDENT([−ant])(B-Trunc) over IDENT([liquid])(B-Trunc) is required. The process is illustrated in the following tableau.

(40) {SYLL-WELL'(*COMPLEX); *M/[rhot]; IDENT([−ant])(B-T)} » IDENT([liq])(B-T)

[gɾe.(ɣ̞ó.ɾjo)] 'Gregorio'	SYLL-WELL' (*COMPLEX)	*M/[rhotic]	IDENT([−ant]) (B-Trunc)	IDENT([liquid]) (B-Trunc)
a.☞[(gó.j̞$_{12}$o)]				*
b. [(gó.l$_{12}$o)]			*!	
c. [(gó.ɾ$_{12}$o)]		*!	*!	
d. [(gó.l$_1$j$_2$o)]	*!			

Candidate (40a) incurs a violation of IDENT([rhotic])(B-Trunc) because it fails at preserving the feature [rhotic] of [ɾ] in the base. Candidate (40b) shows the optimization of [ɾ] into [l] expected in stress-anchored forms, while maintaining the feature [liquid]. Nevertheless, it incurs a fatal violation of higher-ranking IDENT([−ant])(B-Trunc) because it does not preserve the feature [−anterior] of the base glide. Candidate (40c) incurs an extra violation because it fails at optimizing its [rhotic] segment. Finally, candidate (40d) is ruled out because, even though it manages to preserve the features [liquid] and [−anterior], it fails to optimize the

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26 A palatal liquid sound [ʎ] used to be part of the language's inventory, but it has disappeared from almost every variety of Spanish.

complex initial onset into a single segment. As previously discussed, the domination of a constraint against palatalized rhotics is also taken for granted.

To conclude the analysis of phonological palatalization, we must account for the variant stress-anchored forms that optimize complex clusters without resorting to coalescence. In §2.2 we saw that the optimization of complex clusters could be done in two ways, either by coalescing both cluster members into one segment or by deleting the less sonorous segment of the two (e.g. *Anto*[nj]*o* → *To*[ɲ]*o*; *San*[tj]*ago* →[t]*ago*; *Emi*[lj]*o* → *Mi*[l]*o*). Therefore, in order account for variant, glide-deleting forms, the ranking proposed in (41) would have to be reversed.

(41) IDENT([liquid])(B-Trunc)} » IDENT([−ant])(B-Trunc)

[gɾe.(ɣ̞ó.ɾjo)] 'Gregorio'	IDENT([liquid]) (B-Trunc)	IDENT([−ant]) (B-Trunc)
a. [(gó.ʝ̞$_{12}$o)]	*!	
b.☞[(gó.l$_{12}$o)]		*!

This ends the evaluation of the interactions between syllabic well-formedness and Faithfulness(B-Trunc) constraints in stress-anchored forms. Now we can summarize the most relevant rankings established throughout the analysis.

(42) Syllabic well-formedness in stress-anchored non-reduplicative forms

Constraint ranking	**Outcome**
CODA-COND » ANCHOR-RIGHT(B-Trunc)	No final codas
CODA-COND » CONTIGUITY(B-Trunc)	No medial codas
*COMPLEX » CONTIGUITY(B-Trunc)	No complex onsets
CONTIGUITY(B-Trunc) » ONSET	Medial onsetless syllables allowed
ANCHOR-LEFT(B-Trunc) » ONSET	Initial onsetless syllables allowed
*COMPLEX » UNIFORMITY(B-Trunc)	Coalescence allowed

Finally, we can establish the following constraint ranking for left-anchored forms regarding faithfulness and structural markedness.

(43) {FT-BIN; ALL-FT-R; PARSE-SYLL} » ANCHOR-RIGHT(B-Trunc)

{ANCHOR-STRESS; ANCHOR-RIGHT(B-Trunc)} » ANCHOR-LEFT(B-Trunc)

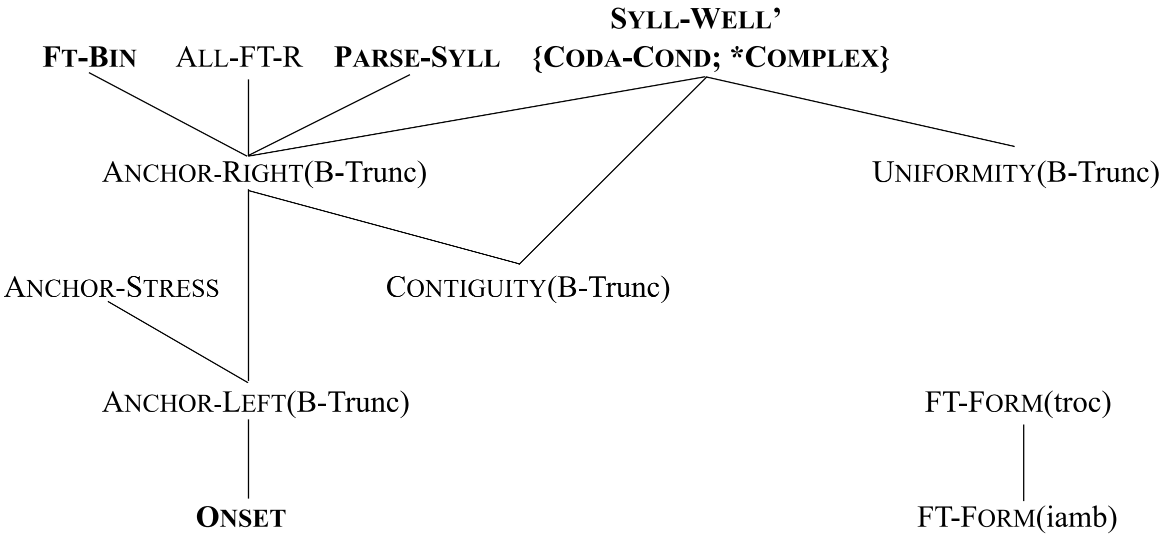
ANCHOR-RIGHT(B-Trunc) » CONTIGUITY(B-Trunc)

FOOT-FORM(trochaic) » FOOT-FORM(iambic)

SYLL-WELL'(CODA-COND; *COMPLEX) » {ANCHOR-RIGHT(B-Trunc); UNIFORMITY(B-Trunc); CONTIGUITY(B-Trunc); ANCHOR-LEFT(B-Trunc)} »
» ONSET

As a summary, the following Hasse diagram will offer a schematic view of the interaction of faithfulness with the syllabic and prosodic constraints intervening in the formation of stress-anchored truncates.

(44) Constraint ranking for optimized stress-anchored truncation



The diagram shows that stress-anchored optimized forms differ from left-anchored ones in that all faithfulness and anchoring constraints are demoted below SYLL-WELL’(CODA-COND; *COMPLEX). The only markedness constraint that remains dominated by both faithfulness and anchoring is ONSET. Another difference with left-anchored forms is the ranking inversion between the two edge-anchoring constraints. Furthermore, CONTIGUITY(B-Trunc) is not only demoted below SYLL-WELL’ with respect to its position in the grammar of left-anchored hypocoristics but below ANCHOR-RIGHT(I-Trunc) as well.

Next, I will formalize the processes of segmental optimization taking place in stress-anchored forms. As illustrated by the data in §2.2, the most common segmental changes observed in this type of nicknames are the following.

(45) Segmental changes due to onset optimization in stress-anchored forms

Base form		**Truncated form**
f	→	p
x	→	k
ɾ	→	l
s	→	tʃ
θ	→	tʃ

The optimizations of [f] into [p] and [x] into [k] are easily explained if we have into account the contrastive hierarchy displayed in (13) in the previous chapter. Both segments lose the marked feature [continuant] due to the high ranking status of *M/[continuant] in stress-anchored forms. This causes the labial fricative to transform into the less marked labial segment in the inventory while the dorsal fricative optimizes into the less marked dorsal segment. The process is illustrated in the following tableau.

(46) *M/[continuant] » IDENT([cont])(B-Trunc)

		*M/[continuant]	IDENT([cont]) (B-Trunc)
[al.(fón.so)] 'Alfonso'	a.☞[(pónʲ.tʃo)]		* (f → p)
	b. [(fónʲ.tʃo)]	*! (f)	
[(xóɾ.xe)] 'Jorge'	a.☞[(kó.ke)]		** (x → k, x → k)
	b. [(xó.xe)]	*!* (x, x)	

The optimization of [ɾ] into [l], on the other hand, is due to the domination of *M/[rhotic] over IDENT([rhotic])(B-Trunc). The feature [rhotic] in the flap is delinked, so the segment becomes the less marked liquid sound in the inventory.

(47) *M/[rhotic] » IDENT([rhotic])(B-Trunc)

[aw.(ɾó.ɾa)] 'Aurora'	*M/[rhotic]	IDENT([rhotic]) (B-Trunc)
a.☞[(ló.la)]		** (l → r, l → ɾ)
b. [(ró.ɾa)]	*!* (r, ɾ)	

The previous interactions account for the precise placement of IDENT(B-Trunc) within the margin markedness hierarchy of Spanish optimized stress-anchored forms.

(48) Constraint ranking of Spanish optimized stress-anchored truncation

{*M/[cont]; *M/[rhotic]} » **IDENT(B-Trunc)** » {*M/[voi]&[lab]); *M/([voi]&[dor]); *M/([voi]&[nas])} » *M/[liq] » *M/([−ant]&[voi]) » *M/[voi] » *M/([nas]&[lab]) » » *M/[−ant] » *M/[dor] » *M/[lab] » *M/[nas]

The changes of the coronal fricatives require some further explanation since they are not instances of phonological but expressive palatalization. First, I will proceed to define the base-to-truncate equivalent to EPALICON(I-Trunc).

(49) EPALICON(B-Trunc) For mappings from base to truncate in which an iconic relationship between phonological structure and denotations of smallness/childishness is established, every coronal obstruent in the base must correspond to a [−anterior] segment in the truncate.
(based on Kochetov and Alderete 2011)

"Coronal obstruent" in (49) above means neither [labial], [dorsal], [nasal] nor [rhotic]. Notice that the targets of base-to-truncate expressive palatalization are a superset of those affected by the input-to-truncate equivalent process.

For expressive palatalization to happen, EPALICON(B-Trunc) must dominate DEP([−anterior])(B-Trunc).

(50) {*M/[continuant]; EPALICON(B-Trunc)} » DEP([−anterior])(B-Trunc)

		EPALICON (B-Trunc)	DEP([−anterior]) (B-Trunc)
[ro.(sá.ɾjo)] 'Rosario'	a.☞[(tʃá.j̩o)]		* (tʃ)
	b. [(tá.j̩o)]	*! (s → t)	
[goṇ.(θá.lo)] 'Gonzalo'	a.☞[(tʃá.lo)]		* (tʃ)
	b. [(tá.lo)]	*! (θ → t)	

Candidates (50a) incur a violation of DEP([−anterior])(B-Trunc) because their voiceless palatal segments bear a feature [−anterior] that has no correspondent in the base form. Candidates (50a) do not have this problem but they fatally violate EPALICON(B-Trunc) because they have two obstruent segments that are not mapped into palatals.

4.3. ***OT analysis of reduplicative forms***

In §3.1 in the previous chapter it was argued that, in the Correspondence Theory of reduplication, base and reduplicant are simultaneously produced. This means that not only can the reduplicant copy the base but that the base can also copy the reduplicant.

(51) Output-to-output correspondence (reduplication)

B-Red Identity

Base ↔ Reduplicative form

B-I Faithfulness ↑

Input

In the cases of reduplication discussed by McCarthy and Prince (1995) the segmental material of the reduplicant is similar or identical to the segmental material of the base. Many characteristics shared by non-reduplicative stress-anchored forms and reduplicative nicknames indicate that both types of truncates are derived from a base form. To begin with, both types of truncates are faithful to the stress placement of the base. However, there are no instances of Spanish reduplicants being attached *directly* to a base form (cf. *Isabel* → **S*-*isabel*; *Alfonso* → **F-alfonso*). In all the reduplicative nicknames under study the affix must be attached to the truncated form *derived* from the base. This means that input-to-truncate reduplication is not a possibility either (cf. *Isabel* → **S-isa*; *Alfonso* → **F-alfon*, in which the reduplicants have been attached to a left-anchored input-to-truncate form). Given the above, for reduplication to happen, output-to-output truncation must occur too. The process is illustrated in the following diagram (from now on, reduplicants will be highlighted for ease of recognition).

(52) Correspondence Theory applied to Spanish reduplicative forms

B-Trunc Ident *Trunc-Red Ident*

B [RED-fe.(lí.pe)] → **T** [RED-(lí.pe)] ↔ **R** [(p-í.pe)]

B-I Faithfulness ↑

I /RED-felipe/

In their 1995 article, McCarthy and Prince affirm that, cross-linguistically, the reduplicant can never be more faithful to the input than the root is. They capture this observation in the following universally fixed ranking.

(53) Root-Faith » Affix-Faith

Because of this metaconstraint, no input-reduplicant faithfulness constraint can ever dominate its input-base cognate. In the case of Spanish hypocoristics, this requisite is a consequence of the reduplicant being attached to the truncated form. As discussed in §3.1, the relation between the truncate and the base is unidirectional; i.e., the base of truncation is prior to the truncated version, which prevents any reduplicant attached to the truncate from being more faithful to the input than the base is.

Nevertheless, the fixed ranking in (53) is required to explain the relation between reduplicant and truncated form. We have seen that segmental optimization of stress-anchored truncates is not compulsory (cf. *Alfonso → Poncho~Fonso*). On the other hand, reduplicative nicknames have a very restrictive segmental inventory, even more so than non-reduplicative optimized truncates. This means that the root of the reduplicant can never be less faithful to the segmental material of the base than the affix is. E.g. a form like *Heliodoro → Doro* ↔ **R-olo* is not grammatical because the consonant in the root of the reduplicate is optimized into a lateral while the reduplicative affix remains as rhotic.

The limited segmental inventory of reduplicative forms must be due to highly restrictive markedness constraints on reduplicative morphemes. Spanish hypocoristic reduplication is always total, so the onset in the root of the truncated form must be optimized in order to copy the reduplicative segment. This explains why the reduplicant can only be attached to a base-to-truncate form and not to a input-to-truncate one. Input-to-truncate nicknames would not be able to match the unmarked segmental content required by the reduplicative affix. On the other hand, base-to-truncate forms, although more marked than reduplicative affixes, do permit several process of segmental optimization that make the possible violations of truncate-reduplicant faithfulness caused by reduplication less “severe”.

Faithfulness between truncate and reduplicative affix will be accounted for by introducing a constraint IDENT(Trunc-Red).

(54) IDENT(Trunc-Red) Correspondent segments in the truncated form and in the reduplicative affix have identical values for feature [F].

IDENT(Trunc-Red) will be explicitly undominated in all the analyses developed throughout this section since every reduplicative affix must be forced to copy the exact features of the segment in the truncate.

The size of the reduplicant, on the other hand, is subdued to the size of the truncate, which must satisfy the prosodic word constraints defined in the previous chapter. As demonstrated in tableaux (23) in the previous section, MAX(B-Trunc) must be dominated by the prosodic word constraints so that truncated forms can achieve their bisyllabic template. Since the reduplicative affix attaches to the truncate, reduplicative forms must fulfill the same prosodic requisites as non-reduplicative stress-anchored forms.

(55) {FT-BIN; ALL-FT-R; PARSE-SYLL)} » MAX(B-Trunc)

[RED-goṇ.(θá.lo)] ↓ [RED-(θá.lo)]	FT-BIN	ALL-FT-R	PARSE-SYLL	MAX (B-Trunc)
a.☞[(l-á.lo)]				***
b. [à.lo-.(á.lo)]			*!*	
c. [(à.lo-).(á.lo)]		*!		
d. [(a.lo-.á.lo)]	*!			

Next, we need to explain why all reduplicative affixes consist on a single segment copied from the truncate. To do so, I will introduce a new faithfulness constraint MAX(Trunc-Red).

(56) MAX(Trunc-Red) Every element in the truncated form has a correspondent in the reduplicative affix.

In order to account for the size of the reduplicative affix, we need to posit the domination of MAX(B-Trunc) over MAX(Trunc-Red).

(57) MAX(B-Trunc)} » MAX(Trunc-Red)

[RED-goṇ.(θá.lo)] ↓ [RED-(θá.lo)]	MAX(B-Trunc)	MAX (Trunc-Red)
a.☞[(l̲-á.lo)]	****	**
b. [(l̲ó̲-lo)]	*****!	
c. [(θá.lo)]	***	

Candidate (57a) incurs two violations of MAX(Trunc-Red) because two segments of the base form ([a] and [o]) are not copied in the reduplicant. Candidate (57b) satisfies MAX(Trunc-Red) by coping every segment of the truncate into the reduplicative affix. However, by doing so it incurs one fatal extra violation of MAX(B-Trunc).

The next question to be answered is why the reduplicative affix must be present at all. In the case of *Gon*[θ]*alo* → *Lalo*, the reason is the domination of a higher marked constraint banning [continuant] segments like [θ] in the truncated form, together with the necessity of the reduplicant to have an onset. Unlike other kinds of suffixation, in principle hypocoristic reduplication does not convey a new meaning to the the truncate to which it attaches. Therefore, the motivation for the reduplicant to surface must be primarily, if not entirely, phonological.

The following tableau illustrates the fact that syllabic and segmental well-formedness constraints act as triggers for reduplication.

(58) {SYLL-WELL(ONSET); *M/[continuant]} » ANCHOR-LEFT(Trunc-Red)

[RED-gon̩.(θá.lo)] ↓ [RED-(θá.lo)]	SYLL-WELL (ONSET)	*M/[continuant]	ANCHOR-LEFT (Trunc-Red)
a.☞[(l̲-á.lo)]			* (l̲)
b. [(θá.θ̲o)]		*!* (θ, θ)	
c. [(á.lo)]	*!		

Note that the anchoring constraint in (58) has been adapted in order to refer to a truncate-reduplicant relation (its base-to-truncate equivalent would have caused four violations instead: [g], [o] [n̩] and [θ]). On the other hand, as it has been previously argued, there is no such as thing as a base-reduplicant relation taking place in Spanish hypocoristics. I will not redefine every anchoring and faithfulness constraints again in order to adapt them to the new kind of correspondence but the reader should be wary in order not to confuse the different mappings.

Most dialects of Spanish do not exhibit [θá.lo] as an independent form. This, however, do not necessarily violate the principle demanding all forms involved in an output-to-output interaction to be free-standing (Benua 1995, 1997). In fact, it is no wonder that a form like [θá.lo], with a highly marked fricative segment, be avoided and transformed into a reduplicant since reduplication is, after all, the strategy to avoid markedness in cases like this one. The important thing, however, is that the truncate [θá.lo] *could* be realized independently from its base; i.e, that it can act as an both an output of [gon̩.(θá.lo)] and an input to [l̲-á.lo].

Note that, in (58) above, CONTIGUITY(Trunc-Red) would need to dominate *M/[continuant] because, otherwise, an hypothetical candidate *Gon*[θ$_1$]*alo* → [tʃ$_1$á.-t̲ʃ̲-o], in which the medial onset in the truncate becomes deleted and substituted by an optimized version of the interdental fricative in the base, would beat the optimal candidate. The exact position of this type of CONTIGUITY(Trunc-Red) with respect to the margin markedness constraints may vary cross-dialectically, as illustrated by the two possible reduplicative nicknames of *Ser*[x]*io*; i.e. [tʃé.-t̲ʃ̲-o] and [k̲-é.ko]. The former variant optimizes input [s] and reduplicates the resulting affricate while the latter optimizes the dorsal fricative [x] and reduplicates the resulting dorsal stop.

The following tableau offers an example of left-anchored reduplication caused by a marked segment in the onset of the final syllable, with the consequent violation of CONTIGUITY(Trunc-Red).

(59) {ONSET; *M/[rhotic]} » CONTIGUITY(Trunc-Red)

[RED-aɾ.(tú.ɾo)] ↓ [RED-(tú.ɾo)]	ONSET	*M/[rhotic]	CONTIGUITY (Trunc-Red)
a.☞[(tú.-t̠-o)]			* (ɾ, t̠)
b. [(r̠-ú.ɾo)]		*!* (r, ɾ)	
c. [(tú.o)]	*!		

The winning candidate (59a) commits two violations of CONTIGUITY(Trunc-Red) because, according to an adapted definition of CONTIGUITY(B-Trunc) in (33) in the previous chapter, this constraint bans both the deletion of the rhotic segment in the truncated form and the disruption of the string of segments in the truncate caused by inserting the reduplicative affix [-t̠-].

Note that the truncated form to which the reduplicative affix attaches in (59) above confirms the statement made in the previous section that ANCHOR-STRESS and ANCHOR-RIGHT(B-Trunc) dominate ANCHOR-LEFT(B-Trunc). Since truncation and reduplication are parallel processes, the outputs for reduplication can give us some valuable information about the shape of the truncate itself.

(60) {ANCHOR-STRESS; ANCHOR-RIGHT(B-Trunc)} » ANCHOR-LEFT(B-Trunc)

[RED-xe.(ɾó$_1$.ni).mo$_2$] 'Jerónimo'	ANCHOR-STRESS (B-Trunc)	ANCHOR-RIGHT (B-Trunc)	ANCHOR-LEFT (B-Trunc)
[RED-(ró$_1$.mo$_2$)] ↕ a.☞[(m-ó$_1$.mo$_2$)]			** (x, e)
[RED-(xé.ro$_2$)] ↕ b. [(l-é.lo$_2$)]	*!		
[RED-(ró$_1$.ni)] ↕ c. [(n-ó.ni)]		*!* (m, o)	** (x, e)

Note that the ANCHORING constraints in the interaction in (60) above refer to base-to-truncate relations. Since reduplicants are always attached to truncates that satisfy the Prosodic Word Restrictor constraints, there is no possible way to figure out the ranking concerning the interaction of truncate-reduplicant anchoring constraints.

Reduplicants derived from antepenultimate stressed names like the one in (60) put into question the interpretation of ANCHOR-STRESS proposed in in the previous section in order to account for mappings such as *Hipólito* → *Polo*. In §2.3 we saw that some reduplicative truncates are derived from an antepenultimate stressed name; e.g. *Jerónimo* → *M-omo* and *Álvaro* → *L-alo* (to which we could, perhaps, add more ambiguous examples like *Tránsito* → *Tato* and *Lázaro* → *Lalo*). Since a form like [RED-xe.(ɾó$_1$.ni).mo$_2$] → [(m-ó$_1$.mo$_2$)] reduplicates the rightmost consonant instead of the less marked consonant of the stressed foot, the interpretation of "stress peak" as "stressed foot" in the definition of ANCHOR-STRESS, as proposed in the previous chapter, would render some unwelcome results.

(61) ANCHOR-RIGHT(B-Trunc) » {CONTIGUITY(B-Trunc); ANCHOR-STRESS}

[RED-xe.(ɾó$_1$.ni).mo$_2$] 'Jerónimo'	ANCHOR-RIGHT (B-Trunc)	CONTIGUITY (B-Trunc)	ANCHOR-STRESS
[RED-(ró$_1$.mo$_2$)] ↕ a.☹[(m̲-ó$_1$.mo$_2$)]		! (n, i)	***! (ɾ, n, i)
[RED-(ró$_1$.no$_2$)] ↕ b.💣 [(n̲-ó$_1$.no$_2$)]		! (i, m)	** (ɾ, i)
[RED-(ró$_1$.ni)] ↕ c. [(n̲-ó.ni)]	*!		

Although neither of the stress-anchored truncates posited in (61) ([ró.mo], [ró.no] and [ró.ni]) are documented nicknames for *Jerónimo*, we know that [xe.(ɾó.ni).mo] → [ró.mo] is bound to be the right mapping because, otherwise, the reduplicant [m-ó.mo] could not have been obtained. On the other hand, the interpretation of "stress peak" as "stressed vowel" would not suffice to account for the victory of the optimal candidate.

Other mappings such as [RED-(ál.β̞)a.ɾo] →[l̲-alo] are ambiguous in that the reduplicative affix could be seen as copying either the lateral segment in the prosodic head or the optimized flap in the final syllable. As stated in the previous section, I leave the question of what constraints are involved in the generation of these patterns open for further analysis.

To finish the prosodic analysis of reduplicants, it should be noted that the foot structure of reduplicative forms is trochaic, just like the other bisyllabic truncates discussed in this work. Therefore, FT-FORM(troc) dominates FT-FORM(iamb).

Throughout this section, I have affirmed several times that hypocoristic reduplication in Spanish is due to phonological reasons. Now I will proceed to formally justify this statement. Many of the triggers for reduplication are exactly the same marked segments that gave rise to the optimization of non-reduplicative stress-anchored forms. Hence, reduplication can be, in many cases, jut an alternative to segmental optimization. However, the data in chapter 2 showed that the marked structures forbidden in reduplicative forms are a superset of those forbidden in non-reduplicative truncates. For reasons that will be posited in the next chapter, reduplicates allow for a degree of segmental and structural optimization with respect to their input forms that no other hypocoristic type can match. Reduplication is, e.g., the only possible strategy to avoid certain voiced obstruent segments as well as onsetless syllables. In order to provide an optimal onset to the truncate, the reduplicant copies an unmarked segment of the truncate form. If necessary, the copied segment can be optimized, as the interaction in the following tableau will show.

(62) SYLL-WELL(ONSET) » ANCHOR-LEFT(Trunc-Red) ;
*M([voi]&[dor]) » IDENT(Trunc-Red)

[RED-(ól.ɣ̞a)] ↓ [RED-(ól.ɣ̞a)]	SYLL-WELL (ONSET)	ANCHOR-LEFT (Trunc-Red)	*M([voi]&[dor])	IDENT (Trunc-Red)
a.☞[(k̲-ó.ka)]		*		* (k)
b. [(ó.ka)]	*!			* (k)
c. [(g̲-ó.ɣ̞a)]		*	*!* (g, ɣ̞)	

Again, be wary that the base-to-truncate faithfulness constraints used in the previous section have been adapted to their base-reduplicant counterparts in (62) above and elsewhere in this section.

Tableau (62) shows two of the main differences between reduplicative and stress-anchored non-reduplicates nicknames regarding syllabic and segmental markedness. One is the domination of ONSET over ANCHOR-LEFT(Trunc-Red), which allows to solve the structural problem raised by bisyllabic onsetless initial names. The other is the possibility to optimize non-coronal voiced segments by delinking their feature [voice].

Another important distinction between the two types of stress-anchored forms is related to the phenomenon of palatalization. As we saw in §2.3, reduplicants undergo all the palatalization processes found in other stress-anchored forms except for [nj] → [ɲ]. In the previous section I posited that IDENT([−anterior])(B-T) had to be undominated for the nasal and the following [−anterior] vocoid to coalesce into a palatal nasal (e.g. *Anto*[nj]*o* → *To*[ɲ]*o*). The higher ranking of *M/([−ant]&[nas]) in reduplicative forms, however, makes the fusion of [n] with [j] inviable. Therefore, in cases like this, the undominated constraint *COMPLEX must be fulfilled by deleting the glide. Likewise, a higher marking constraint demanding faithfulness to the feature [nasal] must be active so that [n] does not turn into the default palatal segment [tʃ].

(63) {*M/([−ant]&[nasal]); IDENT([nasal])(Trunc-R)} » {IDENT([−anterior])(Trunc-R)}

[RED-eɾ.(mí.nja)] ↓ [RED-(mí.n$_1$j$_2$a)]	*M/ ([−ant]&[nasal])	IDENT([nasal]) (Trunc-Red)	IDENT([−ant]) (Trunc-Red)
a.☞[n̠-í.n$_1$a]			*
b. [ɲ̠-í.ɲ$_{12}$a]	*!*		
c. [t̠ʃ̠-í.tʃ$_{12}$a]		*!	

The rest of the interactions between faithfulness and syllabic markedness constraints affecting reduplicates reflect those already been analyzed in the previous section when dealing with stress-anchored truncates in general. The important difference is, nevertheless, that truncate-reduplicant faithfulness constraints are involved in the interactions instead of Faithfulness(B-Trunc). E.g., the deletion of the two codas in *Ca*[ɾ]*lo*[s] → *Caco* illustrates the rankings CODA-COND » ANCHOR-RIGHT(Trunc-Red) and CONTIGUITY(Trunc-Red) » ANCHOR-RIGHT(Trunc-Red). Likewise, *Aure*[lj]*a* → [ɟ̠j̠-é.j̥a]~[l̠é.la] illustrates the domination of *COMPLEX over CONTIGUITY(Trunc-Red), as well as the possibility to coalesce a coronal nasal with the following glide, which is a consequence of ranking *COMPLEX over UNIFORMITY(Trunc-Red). Therefore, all the constraints within the SYLL-WELL conjunction dominate FAITH(Trunc-Red) in reduplicative forms.

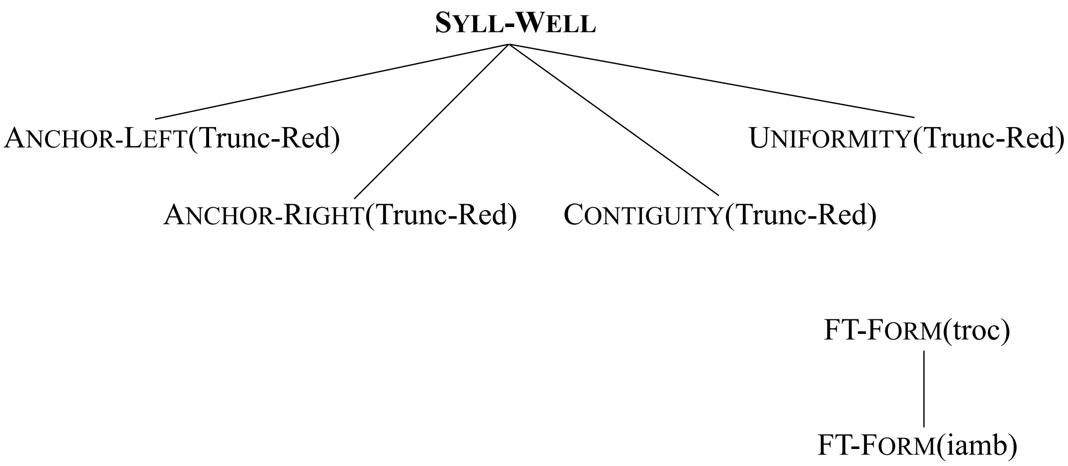
The following list summarizes the most relevant interactions of syllabic well-formedness constraints with faithfulness constraints that apply to reduplicative forms.

(64) Syllabic well-formedness in reduplicative forms

Constraint ranking	**Outcome**
CODA-COND » ANCHOR-RIGHT(Trunc-Red)	No final codas
CODA-COND » CONTIGUITY(Trunc-Red)	No medial codas
*COMPLEX » CONTIGUITY(Trunc-Red)	No complex onsets
ONSET » CONTIGUITY(Trunc-Red)	No medial onsetless syllables
ONSET » ANCHOR-LEFT(Trunc-Red)	No initial onsetless syllables
*COMPLEX » UNIFORMITY(Trunc-Red)	Coalescence allowed

The Hasse diagram in (65) below outlines the interaction prosodic and syllable structure constraints with respect to faithfulness in reduplicative hypocoristics.

(65) Constraint ranking for reduplicative truncation



As the ranking shows, the difference of reduplicative nicknames with respect to stress-anchored non-reduplicates lies in the demotion of faithfulness below SYLL-WELL. This results in a hierarchy in which every anchoring and faithfulness constraint is dominated by markedness.

In addition, the interactions of segmental markedness and faithfulness discussed in this section account for the precise placement of IDENT(Trunc-Red) within the markedness hierarchy of Spanish reduplicative forms.

(66) Constraint ranking of Spanish optimized stress-anchored truncation

{*M/[cont]; *M/[rhotic]} » {*M/[voi]&[lab]); *M/([voi]&[dor]); *M/([voi]&[nas])} » » IDENT(Trunc-Red) » *M/[liq] » *M/([−ant]&[voi]) » *M/[voi] » *M/([nas]&[lab]) » » *M/[−ant] » *M/[dor] » *M/[lab] » *M/[nas]

4.4. *The morphology of truncates*

Benua's (1995) transderivational analysis of truncated forms can be further extended to any word-to-word derivations, such as secondary affixations. In general, words with secondary affixes are compositionally related to their unaffixed counterparts, unlike words with primary affixes. Primary affixation is exemplified by English words such as *class-ic*, *parent-al*, etc. These words are expected to show a semantic drift away from the meaning of the unaffixed nouns class. In contrast, secondary affixation such as *class-y* and *parent-hood* are more transparently related in meaning to their bases. More important for our present purposes, both classes show misapplication identity effects, but different ones. Words with secondary affixes tend to be faithful to their bases, copying main stress and various derived segmental properties (e.g. *Cl*[ɑ:]*ss* → *Cl*[ɑ:]*ss-y*; *P*[ˈɛ]*rent* → *P*[ˈɛ]*rent-hood*), while words with primary affixes generally copy their bases only in the placement of non-primary stress feet (e.g. *Cl*[ɑ:]*ss* → *Cl*[æ]*ss-ic*; *P*[ˈɛ]*rent* → *Par*[ˈɛ]*nt-al*).

The transderivational model has been applied to account for inflection patterns as well. For instance, Colina (2009) makes use of it to explain Spanish plural formation. Standard plural formation in Spanish consists of adding the affix [-s] to words ending in unstressed vowels and [-es] to those ending in consonants. While the bulk of the literature favors epenthesis proposals to explain *-e* insertion, Colina argues that they do not provide a satisfactory explanation of why some clusters undergo plural epenthesis (e.g. *sol* → *sol-e-s* 'suns', but not **so*[l-s]) despite being well formed in singular forms (cf. *va*[ls] 'waltz', *so*[ls]*ticio* 'solstice'). In her opinion, the reason for this asymmetric behavior is that singular forms undergo an input-to-output correspondence relation whereas plurals are mapped from the base form.[27] The requirement of an epenthetic [-e-] in the plural but not in singular forms would thus reflect an Emergence of the Unmarked effect with respect to the constraint against coda consonants. I.e., SYLL-WELL dominates DEP(O-O) but it is at the same time dominated by the higher ranking DEP(I-O). According to her, the coda violation caused by the plural

[27] Colina (2009) uses several arguments to defend this proposal. The most relevant one is that the Spanish plural morpheme is attached to the morphological word after all other derivational and inflectional morphemes have been affixed (e.g., $[[\text{cas}]_{\surd}\text{a}]_{\text{stem}}]$ → $[[[\text{cas}]_{\surd}\text{a}]_{\text{stem}}]\text{s}]$ 'houses' vs $[[\text{cas}]_{\surd}\text{ero}]_{\text{stem}}]$ 'housekeeper'). See also Lloret and Mascaró (2006) for an output-to-output correspondence analysis of Spanish plurals and diminutives.

affix itself is justified by the presence of a higher ranking constraint ALIGN(Pl, R, Wd, R) ("The right edge of the plural morpheme must be aligned with the right edge of the word").

(67) ALIGN(Pl, R, Wd, R) » SYLL-WELL » DEP(O-O)

[mu.xéɾ]+/s/ 'woman+PL'	ALIGN (Pl, R, Wd, R)	SYLL-WELL	DEP(O-O)
a.☞[mu.xé.ɾ-es]		*	*
b. [mu.xéɾ-s]		**!	
c. [mu.xé.ɾ-e.se]	*!		**

Candidate (67a) incurs a violation of SYLL-WELL(CODA-COND) because of the [s] in its last syllable. The violation of CONTIGUITY(O-O) is due to the epenthetic [e] inserted before [s]. Candidate (67b) also violates CODA-COND because of the [s]. In addition, it incurs a fatal violation of SYLL-WELL(COMPLEX) due to the final cluster [ɾs]. Candidate (67c), which satisfies all the structural requirements of SYLL-WELL, is discarded because it fatally violates the higher ranking constraint ALIGN(Pl, R, Wd, R) by adding a second epenthetic vowel at the right of the plural morpheme. Note that the stress placement of the base is maintained in the optimal candidate, as expected in an output-to-output correspondence relation.

As predicted by factorial typology, when ALIGN(Pl, R, Wd, R) becomes dominated by SYLL-WELL by constraint reranking, the candidate with the two epenthetic vowels succeeds over the others. This is in fact the case with plural formation in Dominican Spanish (Colina 2009).

(68) SYLL-WELL » {DEP(O-O); ALIGN(Pl, R, Wd, R)}

[mu.xéɾ]+/s/ ‘woman+PL’	SYLL-WELL	DEP(O-O)	ALIGN (Pl, R, Wd, R)
a. [mu.xé.ɾ-es]	*!	*	
b. [mu.xéɾ-s]	*!*		
c.☞[mu.xé.ɾ-e.se]		**	*

The process of optimization of marked structures when the base receives certain affixes can be traced in many other languages. E.g., Jurgec (2014) observes that in some languages a number of derived and inflected words show less marked structures with respect to their stems. This author analyzes several loanwords that present an interesting pattern. While many underived/uninflected words allow for segments that are alien to the native inventory of the given languages, some of them must undergo the “nativization” of the marked segments when derived/inflected. For instance, Tagalog, whose native inventory lacks a labial fricative, allows for this sound in the Spanish loan [f]*iesta* “fest”, which is nevertheless derived as *pam*-[p]*ista* ‘INSTR’ and [p]*ista-han* ‘festival’. Although Jurgec’s analysis does not make use of Correspondence theory, I consider that these instances of nativization are in fact cases of segmental optimization due to the Emergence of the Unmarked effect generated by an output-to-output mapping. Underived words, which are the product of an input-to-output mapping, do not show this effect and, consequently, are allowed to exhibit more marked structures.

Some authors criticize the output-to-output correspondence approach to plural affixation as described by Colina by pointing out that recent loanwords in Spanish do allow for coda clusters in their plural forms (e.g. *píxe*[l-s], *álbu*[m-s]).[28] Furthermore, not only do these forms lack an epenthetic [e], they also fail to show the processes of structural optimization that the derived words studied by Jurgec would lead us to expect. On the one hand, *P*[í]*xel* shows a marked structure in that, unlike most native Spanish words, it is not sensitive to syllabic weight. On the other hand, *Álbu*[m] is marked because it exhibits a non-coronal nasal in coda position. I will posit that the exceptional plural forms of these words are the result of an input-to-output mapping. Spanish speakers fail to recognize both *píxel* and *álbum* as base forms (stems) due their unusual, highly marked structure, so affixation by means of output-to-output correspondence is no longer available. As a consequence, there is

[28] Despite of the normative forms *píxeles* and *álbumes*.

no Emergence of the Unmarked effect forcing neither [-e-] insertion nor any kind of structure optimization.

As discussed in the introduction to this chapter, Benua (1995, 1997) defines the base as a free-standing output form (a stem). While most Spanish non-verbs exhibit a vowel (commonly known as class marker) at the right edge of their stems (e.g. [[pɾá.ð]$_{\surd}$ -o]$_{stem}$ 'meadow', [[gwá.p]$_{\surd}$ -a]$_{stem}$ 'good-looking.FEM'), it is true that many other free-standing forms do not phonetically implement any vowel in the expected position (e.g. [[a.θú.kaɾ]$_{\surd}$ -Ø]$_{stem}$'sugar', [[gɾis]$_{\surd}$ -Ø]$_{stem}$ 'grey'.[29]

Regarding the examples with exceptional plurals discussed above, many words ending in [l] are recognized by Spanish speakers as free-standing, desinence-less stems. Nevertheless, unlike *píxel*, they usually bear the stress in the last syllable (e.g. *mant*[é]*l* 'tablecoth', *cla*v[é]*l* 'carnation')[30]. As predicted by Colina's output-to-output correspondence analysis, these words form the plural by inserting an epenthetic [-e-] before [-s] (e.g. [[[man̪.té.l]$_{\surd}$ ∅]$_{stem}$-es]).

Likewise, many non-final stressed Latinate words ending in a nasal lack a class marker (e.g. *cert*[á]*men* 'contest', *res*[ú]*men* 'summary'), just like *Album*. However, the final segment in these forms is generally a coronal, even when spelling conventions dictate otherwise (e.g. *súmmu*[n] 'height', spelt with a final <*m*>). As expected, in these cases the plural is also formed by adding an epenthetic [-e-] (e.g. [[[θeɾ.tá.me.n]$_{\surd}$ ∅]$_{stem}$ -es]).

Only when nativized, these highly marked words can be finally recognized as free-standing forms and must and receive their plural affixes by means of an output-to-output correspondence relation. This is the case with the nativized loan *pix*[é]*l*, with a stress switch, as pronounced in Mexico and other American countries (DPD 2005).[31] Following the general tendency, its plural form becomes *pix*[é]*l-es*. Likewise, *álbu*[n], pronounced with a neutralized coda by some Spanish speakers, exhibits an epenthetic plural form *álbu*[n]-*es* (Bermúdez Otero 2006). As Jurgec's examples suggest, it could also be the case that the same speaker were able to produce a segmentally unmarked plural derived from a marked singular form (e.g. *albu*[m] → *álbu*[n]*es*). This possibility is still to be studied. In any case, what Jurgec's

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29 It is controversial wether vowels other than *-a*, *-o*, and *-e* qualify as class markers. See Bermúdez-Otero (2006) for an approach denying this claim.

30 There are some exceptions to the general tendency such as *fácil → fáciles* 'easy.PL' and *túnel → túneles* 'tunnels'.

31 A similar process occurs with the Swedish loan *nóbel* 'Nobel prize', which is sometimes nativized as *nob*[é]*l → nob*[é]*les*.

data make clear is that the opposite situation cannot happen; i.e., an unmarked singular could never be inflected into a marked plural. This behavior is easily explained if we consider inflectional words to derive from the base and not from an underlying representation.

The situation depicted for unnativized loans also applies to the plural forms of left-anchored truncates, such as *prímer-s* ‘first dibs.pl’ (as in *¿Quiénes han sido prímers?* ‘Who have got first dibs?’). In addition, left-anchored plural nicknames such as *Asun-s* (plural truncate derived from *Asunción*) tend to show the behavior expected in input-to-output affixation. Among the marked features [á]*sun* exhibits are the *-un* ending (*-en* being much more common in non-final stressed forms), the onsetless initial syllable and the insensitiveness to syllabic weight (unlike the previous example, *album*). When the speaker fails to recognize *Asun* as a valid stem (i.e. a free-standing form), the only possible way to obtain its plural is by means of input-to-output correspondence.

(69) CONTIGUITY(I-Trunc) » SYLL-WELL

/ásun/+/s/	CONTIGUITY (I-Trunc)	SYLL-WELL
a.☞ [á.sun-s]		**
b. [á.su.n-es]	*!	*

The first vowel in the underlying representation must bear a diacritic because, otherwise, the weight-to-stress principle active in Spanish would render a final-stressed optimal output.

Candidate (69a) incurs two structural violations. The final [s] violates CODA-COND and the final consonant cluster violates *COMPLEX. Candidate (69b) only violates CODA-COND, but incurs a fatal violation of the higher ranking faithfulness constraint CONTIGUITY(I-Trunc) because of its epenthetic vowel.

On the other hand, the next tableau will show how a stress-anchored form derived from the same name, *Asunción*, is bound to add an epenthetic vowel to avoid the marked syllabic structure.

(70) CONTIGUITY(I-Trunc) » SYLL-WELL » CONTIGUITY(B-Trunc)

[tʃon]+/-s/	CONTIGUITY (I-Trunc)	SYLL-WELL	CONTIGUITY (B-Trunc)
a.☞ [tʃó.n-es]		*	*
b. [tʃon-s]		**!	

The constraint interaction in (70) reflects the ranking unveiled in §4.2, according to which CONTIGUITY(B-Trunc) had to be placed below SYLL-WELL to account for optimized stress-anchored forms.

Candidate (70a) incurs a violation of CONTIGUITY(B-Trunc) due to its epenthetic vowel but fares better than the loser candidate (70b) because it incurs one less structural violation. Cf. the ungrammatical *[tʃons] with very common plural loanwords such as *clip-s* or *club-s*, with exhibit highly marked obstruent segments in their codas.[32]

A documented candidate [tʃó.n-a-s] has been omitted from tableau (70) because it is clearly derived from the singular form [tʃó.n-a]. According to the definition of FT-BIN in (23) in the previous chapter, binarity could be achieved at a moraic or syllabic level. While [tʃon] achieves the former, [tʃó.n-a] fulfills the latter by adding a feminine gender marker. This addition cannot be regarded as epenthetic though. Spanish gender markers are *-o* for masculine names and *-a* for feminine ones, while *-e* is universally held as the default vowel in Spanish.[33] For instance, in the introduction to this chapter we saw that *Nel-o* is a common nickname for the male name *Manuel* while **Nel-e* is not documented in any dialect.

Roca and Felíu (2003) contend that the assignment of *-o* to male-referring truncates with consonant final stems and *-a* to female-referring truncates with the same characteristics should be interpreted as default. The three relevant constraints used in their analysis are the following.

(71) [αFEMALE] → [αFEMININE] Thee lexical semantic feature [±FEMALE] must be related to the morphosyntactic feature [±FEMININE].

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32 But cf. also the recent English loans *pin* → *pin-s* and *fan* → *fan-s*.

33 See Colina (2009) for an optimality-theoretic analysis on vowel epenthesis in Spanish.

[+FEMININE] → *-a*	The feminine gender must be related with the class marker *-a.*
-o	The absolute default class marker is *-o*.

According to these authors, all three constrains in (71) above are morphologically motivated, while *-e* insertion is purely phonological. In my interpretation of their analysis, *-e* is not a class marker but an epenthetic element that arises whenever a vowel is needed to avoid a marked structure between a free-standing form and a morpheme. The insertion of this element would be triggered by a dominated phonological constraint of the form V → *-e*.

The interaction of the constraints defined in (71) will be illustrated in the next tableau, where the Spanish name *Asunción*, which can be used for both females and males, will be specified with the feature [+FEMALE].

(72) {[αFEMALE] → [αFEMININE]; [+FEMININE] → *-a*} » *-o*

[à.suṇ.θjón] [+FEMALE]	[αFEMALE] → [αFEMININE]	[+FEMININE] → *-a*	*-o*
a.☞[tʃó.n-a] [+FEMALE] [+FEMININE]			*
b. [tʃó.n-o] [+FEMALE] [+FEMININE]		*!	
c. [tʃó.n-o] [+FEMALE] [−FEMININE]	*!		

Candidate (72a) bears the morphosyntactic feature [+FEMININE], which is related to the [+FEMALE] feature of the lexical form. The feature [+FEMININE] causes [-a] to surface as a gender marker, with the consequent violation of *-o*. Candidate (72b) bears the default masculine marker [-o], which causes a fatal violation of the higher ranking constraint

[+FEMININE] → *-a*. The other candidate bearing the absolute default marker, (72c), avoids the violation of [+FEMININE] → *-a* at the cost of fatally violating [αFEMALE] → [αFEMININE]. I.e., there is a mismatch between the semantic feature of the base and the gender of the affix attached to the truncate.

Many personal names make semantic reference to sex without exhibiting either of the two gender vowels in question (e.g. the male name *Vicent-e*). Furthermore, some sex-referring human names show up with a vowel opposite to the one expected. This is the case with the previously discussed name *Consuel-o*, which can used for both females and males. In order to account for this fact, Roca and Felíu posit the domination of IDENT(B-T)-DESINENCE ("the desinence of the input corresponds to the desinence of the output") over [+FEMININE] → *-a*.

(73) {[αFEMALE] → [αFEMININE]; IDENT(B-T)-DESINENCE} » [+FEMININE] → *-a*

[kon.swé.l-o] [+FEMALE]	[αFEMALE] → [αFEMININE]	IDENT(B-T)-DESINENCE	[+FEMININE] → *-a*
a.☞[tʃé.l-o] [+FEMALE] [+FEMININE]			*
b. [tʃé.l-a] [+FEMALE] [+FEMININE]		*!	
c. [tʃé.l-o] [+FEMALE] [−FEMININE]	*!		

Candidate (73a) violates [+FEMININE] → *-a* but remains faithful to the base desinence [-o]. Candidate (73b), which satisfies both [αFEMALE] → [αFEMININE] and [+FEMININE] → *-a* by adding a base desinence [-a], incurs a fatal violation of the faithfulness constraint IDENT(B-T)-DESINENCE. Lastly, candidate (73c), which is faithful to the base desinence, exhibits a mismatch between the semantic feature [+FEMALE] and the morphosyntactic feature [−FEMININE]. Although equal in the surface, (73c) and the winning candidate (73a) would differ in that (73c) may render an ungrammatical agreement relation such as **Chel-o es* *muy divertid-o* 'Chelo.FEM is so funny.MASC', instead of the optimal construction *Chel-o es muy divertid-a*.

Although a loser candidate in tableau (73), [tʃé.l-a] is a well documented nickname for *Consuelo*. This candidate will rise if the ranking of IDENT(B-T)-DESINENCE with respect to [+FEMININE] → *-a* is inverted.

(74) {[αFEMALE] → [αFEMININE]; [+FEMININE] → *-a*} » IDENT(B-T)-DESINENCE

[kon.swé.l-o] [+FEMALE]	[αFEMALE] → [αFEMININE]	[+FEMININE] → *-a*	IDENT(B-T)-DESINENCE
a. [tʃé.l-o] [+FEMALE] [+FEMININE]		*	
b.☞[tʃé.l-a] [+FEMALE] [+FEMININE]			*!
c. [tʃé.l-o] [+FEMALE] [−FEMININE]	*!		

So far, this chapter has explained why stressed-anchored nicknames allow for structural optimization and gender vowel change. On the other hand, I have previously shown that left-anchored nicknames disallow both optimization and gender affixation (except for some dialects such as Bogota Colombian (Mikío 1985)). This phenomenon, which was noticed as early as 1995 by Boyd-Bowman, has not received much attention in the literature. Again, I will make use of the notions of ouput-to-ouput and input-to-ouput correspondence to justify this asymmetry.

Mappings such as *Consuelo* (♀) → **Cons-a* or *Gabriel* (♂) → **Gabr-o* are ungrammatical because input-to-truncate left-anchored forms like *Consu* and *Gabri*, with their unusual *-u* and *-i* endings, are not seen as native stems. Since these vowels are not regarded as proper desinences, the default gender marker could only be attached to the right of the nickname, rendering undocumented forms like *[[kón.su]$_{\surd}$ a]$_{\text{stem}}$ and *[[gá.βɾi]$_{\surd}$ o]$_{\text{stem}}$. The latter examples are forced to drop their final vowels because, as we saw in §2.2, non-final stressed Spanish words cannot end in a complex nucleus (cf. *Manuel* → **Manue*; *Daniel* → **Danie*). The result is that, in these kind of nicknames, the gender affix can never surface. Likewise, left-anchored consonant-final forms like *Asunción* (♀) → *Asun* and *Francisco* (♂) → *Fr*[á]*ncis* are interpreted as roots, not as free-standing stems. Therefore, they should also add their hypothetical gender vowels to their right edges, which would render the ungrammatical three-syllable truncates *[[á.su.n]$_{\surd}$ a]$_{stem}$ and [[fráṇ.θi.s]$_{\surd}$ o]$_{stem}$.

Nevertheless, in §2.3 we saw that unusual root endings can be occasionally reinterpreted as proper Spanish desinences. This is what happens in nicknames such as *Dolor-e-s* (♀) → *Lol-a* and *Gertrud-i-s* (♀) → *Tul-a.* The two last segments in the base forms of these stress-anchored hypocoristics have been reinterpreted as pseudo-plurals, which allows them to drop their pseudo-morphemes and insert a default gender vowel. Another consequence of such reinterpretation is that they are regarded as free-standing forms. Hence their stress-anchoring pattern and segmental optimizations (*Dolo*[ɾ]*-e-s* → *Lo*[l]-*a*; *Gertru*[ð̞]-*i-s* → *Tu*[l]-*a*), which, as we have discussed, are the product of an output-to-output relation.

Exceptionally, some left-anchored nicknames can be reinterpreted as free-standing forms and are thus permitted to undergo gender vowel augmentation. However, the segmental optimization observed in such forms give away their actual output-to-output mapping. Note, for instance, *Gabriel* (♂) → **Gabr-o*, *Fran*[θ]*isco* (♂) → **Fran*[θ]-*o*, *Vicente* (♂) → **Vi*[θ]*o*, *Mer*[θ]*edes* (♀) → **Mer*[θ]*a*, and *Con*[θ]*epción* (♀) → **Con*[θ]-*a*. Then compare them with the documented nicknames *Gab-o*, *Panch-o*, *Vicho-o*, *Mech-a* and *Conch-a*. The segmental changes of the latter forms can only be explained by an output-to-output mapping that is not directly made from their non-truncated names but from their correspondent left-anchored hypocoristics. This would account for the stress placement of the resulting nicknames.

If this is so, mappings such as *Gab*[ɾ]-*i* → *Gab-o*, [fɾ]*an*[θ]-*i-s* → [p]*a*[n^{j}.tʃ]-*o*, *Vice* → *Vi*[tʃ]-*o*, *Me*[ɾ.θ]-*e* → *Me*[tʃ]-*a* and *Con*[θ]-*e* → *Co*[n^{j}.tʃ]-*a* would certainly make a case for my interpretation of Jurgec's (2014) typological observations. I.e., words that are the product of an input-to-output mapping are segmentally faithful to their inputs while derived words, which require an output-to-output correspondence relation, exhibit less marked structures as a consequence of the Emergence of the Unmarked effect.[34] It is true that this effect obtains much less marked structures than the ones that emerge in non-truncated processes giving rise to output-to-output correspondence. Nevertheless, hypocoristics are special in that they allow for a degree of faithfulness demotion that no other forms in the language can match. This phenomenon can be explained from a pragmatic point of view. Due to the generally unequivocal referents of proper names, they are expected to produce less ambiguity than common names and are, therefore, allowed to generate a greater mismatch between input and output.

Before putting and end to this section, I should mention that, apart from the already discussed causes of gender vowel augmentation, other suffixes can be attached to the stem of the truncates by supplanting their final vowel. Among them, the more common ones have the forms [-i] and [-is] (the latter one is especially prolific in Mexico; see Boyd-Bowman 1955, Baez Pinal 2002, and Gutiérrez 2009). We find these two suffixes attached to both optimized stress-anchored truncates (e.g. *Asunción* (♀) → *Chon-i*, *Guadalup-e* (♀) → *Lup-is*) and left-anchored ones (e.g. *Natali-a* (♀) → *Nat-i*; *Sofí-a* (♀) → *Sof-is*). As illustrated by the previous examples, these affixes are attached to female names almost exclusively. This could be so because, in Spanish as well as in many other languages, the front high vowel found in both [-i] and [-is] tends to be iconically associated with the notion of smallness. Moreover, the fact that, unlike gender markers, the two suffixes can be attached to left-anchored forms, puts them in parallel with other types of diminutive suffixation like [-it-] or [-iʝ-], which can be added to any non-derivative name (e.g. *Pabl-o* → *Pabl-it-o*, *Violet-a* → *Violet-ill-a*).

[34] It could be argued that a stem vowel change is not one of the types of derivation that usually give rise to output-to-output relations. Nevertheless, while mappings like *fos-o* 'trench' → *fosa* 'grave' show a semantic drift between output and input, the vowels attached to the nicknames in question are simply some default gender markers reflecting the biological gender of their corresponding inputs. They do not show any semantic changes other than the denotations of smallness/childishness that might be conveyed by the optimization of margin segments.

5. An account of hypocoristic variation

This chapter will offer an account of hypocoristic variation in Spanish by positing the possibility of switching between the three different phonological mappings discussed in the previous chapter: *input-to truncate*, *base-to-truncate* and *truncate-reduplicant* relations. This will be justified on the basis of a series of structural requirements. The proposal will be able to explain the many typological gaps and the different phonological and morphological behaviors observed in the most common types of Spanish templatic truncation. It will do so by postulating a single grammar with three different types of relations between input and output forms in a way that no other analysis on the topic has yet proposed.

As the previous section has shown, most processes involving an output-to-output correspondence relation in Spanish, such as plural formation (see Colina 2009), require the satisfaction of both ANCHOR-LEFT and ANCHOR-STRESS.

(1) {ANCHOR-LEFT(O-O); ANCHOR-STRESS} » WSP

[en.(rí.ke)]+/s/ 'Enrique+PL'	ANCHOR-LEFT (O-O)	ANCHOR-STRESS	WSP
a.☞[en.(rí.ke-s)]			*
b. [(èn.ri).(ké-s)]		*!	

The presence of ANCHOR-STRESS is crucial for the optimal candidate to win. Candidate (1a) violates the prosodic constraint WSP (Weight-to-Stress Principle), which requires that heavy syllables bear stress. WSP applies to the vast majority of Spanish non-derived words but, crucially, not to output-to-output derivatives such as plurals.

The process of templatic truncation in Spanish, which consists in the demotion of anchoring and faithfulness below the Prosodic Word restrictor constraints (FT-BIN, PARSE-SYLL and ALL-FT-R), makes impossible for certain forms to fulfill the requisites of both anchoring constraints simultaneously. Since most of the cases of truncation in Spanish are left-anchored, ANCHOR-LEFT must dominate ANCHOR-STRESS in the grammar. In fact, this ranking is compulsory in the formation of Spanish clippings, e.g. *Bicicl*[é]*ta → Bici* 'Bike', *Motocicl*[é]*ta → Moto* 'Motorbike', *Televisión* → Tele 'TV', *Metropolit*[á]*no → Metro* 'Subway', *Prim*[é]*ro → Prímer*, etc. These forms contrast with some hypothetical stress-anchored bisyllabic variants like *Bicicleta/Motocicleta → *Cleta*, **Televisón → *Visión*, *Metropolitano → *Tano* or *Primero → *Mero*.

As has been thoroughly discussed in the previous chapters, the left-anchored truncation is also a productive process to form hypocoristics in Spanish.

(2) {PWR(PARSE-SYLL); ANCHOR-L(I-Trunc)} » ANCHOR-R(I-Trunc)

/elisa/ 'Elisa'	PWR (PARSE-SYLL)	ANCHOR-LEFT (I-Trunc)	ANCHOR-RIGHT (I-Trunc)
a.☞[(é.li)]			** (s, a)
b. [(lí.sa)]		*!	
c. [e.(lí.sa)]	*!		

In (2) above I use an input-to-truncate version of ANCHORING since, in my opinion, the fact that this forms are not stress-anchored is due to this kind of mapping. One important consequence input-to-truncate relations is that ANCHOR-STRESS is, generally, vacuously satisfied due to the truncate being directly mapped from an underlying representation. Nevertheless, mappings such as /berónika/ → [(bé.ɾo)] show that the, in the grammar of input-to-truncate forms, ANCHOR-LEFT(I-Trunc) dominates the constraint requiring the preservation of lexical stress. If /berónika/ had not a lexical stress specification, a default penultimate stress form *[(bè.ɾo).(ní.ka)] would be expected.

Nevertheless, the last chapters has shown that left-anchoring is not the only productive way to form new hypocoristics in the language. In fact, Spanish is unusual in that the same name may give rise to several different nicknames that do not share many characteristics in common. E.g., in §4.1 has shown that, within the same input-to-truncate relation proposed in (2), it is possible to find some cases of left-anchored misaligned forms.

Almost every, if not all Spanish names with an initial vowel have, at least, a stress-anchored hypocoristic form, such as *Esper*[á]*nza → Espe*, *Asunción → Asun,* or *Alej*[á]*ndro*

→ *Ale*. Nevertheless, in certain dialects, some forms may surface which are neither left- nor stress-anchored; e.g. *Esper*[á]*nza* → *Pera*, *Álvaro* → *Varo*. Alber (2010) finds similar cases in the formation of Russian and Czech hypocoristics and attributes the misalignment to a higher ranking constraint ONSET. Since most vowel initial names in Spanish can be perfectly anchored to their left-edges, I will consider misaligned forms as the result of demoting the ANCHORING(I-Trunc) constraints below ONSET in certain dialects (e.g. some varieties of Mexican Spanish in the case of *Esper*[á]*nza* → *Pera*).

(3) SYLL-WELL(ONSET) » ANCHOR-LEFT(I-Trunc) » ANCHOR-RIGHT(I-Trunc)

/esperan̪θa/ 'Esperanza'	ONSET (PARSE-SYLL)	ANCHOR-LEFT (I-Trunc)	ANCHOR-RIGHT (I-Trunc)
a.☞[(pé.ɾa)]		** (e, s)	*** (n̪, θ, a)
b. [(es.pe)]	*!		***** (ɾ, a, n̪, θ, a)

In fact, when the pragmatic situation requires brevity, an informal register of Spanish may allow for the deletion of the initial onsetless syllable [es-] in certain trisyllabic verb forms. E.g.; *escucha* → *cucha* 'listen.IMPERATIVE'; *espera pera* 'wait.IMPERATIVE'; *estate quieto* → *tate quieto* 'don't move.IMPERATIVE'. As in tableaux (3), these truncations do not require an output-to-output mapping but a demotion of ANCHORING(I-Trunc) below ONSET. Nevertheless, cf. the given examples of misaligned verb forms with regular Spanish clippings beginning with an onsetless syllable such as *universid*[á]*d* → *uni* 'university'.

Some instances of left-anchored misalignment could be interpreted as cases of stress-anchoring, and vice versa. One of this ambiguous cases is *Lisa*, a variant form of the nickname analyzed in (2) as *Elisa* → *Eli*. Nevertheless, the existence of actual stress-anchored truncation is demonstrated by forms such as *Adalb*[é]*rto* → *Berto*, *Alej*[á]*ndro* → *Jandro* or *Anast*[á]*sio* → *Tasio*. These forms cannot be accounted for by means of an input-to-truncate correspondence relation since, as it has been already stated, the underlying representations of neither of these names bears stress specification. Therefore, according to my proposal in §4.2, stress-anchored Spanish nicknames require a mapping from the base to the truncate .

The effect of stress-anchored truncation in the examples given above is similar to the one obtained through the demotion of ANCHORING(I-Trunc) below ONSET. This is an indication that the switch between left- and stress-anchoring is not as arbitrary as it might seem at a first glance. In fact, as I will try to prove in this section, it is not arbitrary at all.

(4) ANCHOR-RIGHT(B-Trunc) » ANCHOR-LEFT(B-Trunc) ;
FAITH(B-Trunc) » SYLL-WELL

[(à.le).(xán̪.ð̞ɾo)] 'Alejandro'	ANCHOR-RIGHT (B-Trunc)	ANCHOR-LEFT (B-Trunc)	FAITH (B-Trunc)	SYLL-WELL
a.☞[(xán̪.ð̞ɾo)]		*** (a, l, e)		* (*COMPLEX)
b. [(xán̪.ð̞o)]		*** (a, l, e)	*! (CONTIG)	
c. [(á.le)]	*!***** (x, a, n̪, ð̞, ɾ, o)			* (ONSET)

Apart from the obvious fact that they are sensitive to the stress in the base form, stress-anchored nicknames have a special characteristic not shared by their left-anchored correspondents. This feature is the possibility to become segmentally and syllabically optimized, as illustrated by the examples in (5) below.

(5) Stress-anchored non-optimized and optimized variant forms

Base form		**Non-optimized stress-anchored**	**Optimized stress-anchored**
Adalb[é]rto	→	Berto	Beto
Ale[xá]ndro	→	Jandro	Jan(d)o
Alf[ó]nso	→	Fonso	Pon[tʃ]o
Alfr[é]do	→	Fredo	Pé[j]o
Anast[á]sio	→	Tasio	Ta[tʃ]o
Elisa	→	Lisa	Li[tʃ]a
Ern[é]sto	→	Nesto	Neto

E.g., although the two input-to-truncate possible nicknames of Adalberto, *Adal* and *Dalber* are documented variant forms, neither of them is allowed to be syllabically optimized.

The kind of hypocoristic variation displayed in (5) has been thoroughly explained in §4.2 so I will not get into details with every possible optimization. The following tableau will show that the forms in the rightmost column in the list are the result of demoting FAITHFULNESS(B-Trunc) and below SYLL-WELL'(*COMPLEX; CODA-COND), while maintaining ANCHOR-RIGHT(B-Trunc) in a dominating position with respect to ANCHOR-LEFT(B-Trunc).

(6) ANCHOR-RIGHT(B-Trunc) » ANCHOR-LEFT(B-Trunc) ;
SYLL-WELL'(*COMPLEX; CODA-COND) » FAITH(B-Trunc)

[(à.le).(xá n̪.ð̞ɾo)] 'Alejandro'	ANCHOR-RIGHT (B-Trunc)	ANCHOR-LEFT (B-Trunc)	SYLL-WELL'	FAITH (B-Trunc)
a. [(xán̪.ð̞ɾo)]		*** (a, l, e)	*! (*COMPLEX)	
b.☞[(xán̪.ð̞o)]		*** (a, l, e)		* (CONTIG)
c. [(á.le)]	*!***** (x, a, n̪, ð̞, ɾ, o)			

As tableaux (6) demonstrates, there is no need to to postulate the demotion of Faithfulness(B-Trunc) below ONSET in the grammar of stress-anchored forms since the domination of ANCHOR-STRESS(B-Trunc) over ANCHOR-LEFT(B-Trunc) alone is responsible for ruling out the left-anchored candidate. The different raking of these two anchoring constraints in left-anchored and stress-anchored forms is not the result of a capricious switch in the hierarchy but must be attributed to the perceptual salience of stressed and final vowels. As argued in §4.2, input-to-truncate forms, being derived from underlying representations, are not affected by such perceptual considerations.

The discussed asymmetric behavior of left-anchored and stress-anchored forms regarding segmental and syllabic optimization is another strong argument in favor of the input-to-truncate versus base-to-truncate differentiation. As thoroughly discussed in §4.2, the changes in stress-anchored forms that aim toward unmarked structures comprise several optimization processes (coalescence, cluster reduction, nasal deletion, rhotic and fricative segmental optimization, etc.). In sharp contrast with this, §4.1 showed that left-anchored forms must remain syllabically and segmentally faithful to their inputs except for some instances of coronal fricatives undergoing expressive palatalization (see Kochetov and Alderete 2011). For instance, unlike the stress-anchored optimization *Anto*[nj]*o* → *To*[ɲ]*o*, a left-anchored form like *Daniel* → *Dani* can avoid having an unstressed complex nuclei structure only by deleting the final segments of the input name. Any other kind of phonological process causing a violation of IDENTITY, CONTIGUITY or UNIFORMITY is forbidden: *Da*[nj]*el* → **Da*[ɲ]*e*.

The base-to-truncate mapping I attribute to stress-anchored forms offer an explanation for this asymmetric behavior as a consequence of the Emergence of the Unmarked effect (McCarthy and Prince 1994a). This effect, which refers to situations where some marked structure generally allowed in a language is banned in particular contexts, can be observed in other types of output-to-output correspondence relations in Spanish, such, e.g., plural formation (see Colina 2009).

Finally, we have to deal with forms that cannot be improved by recurring to a base-to-truncate alternative to left-anchoring; e.g., bisyllabic names with an onsetless syllable. We have seen that the strategy in these cases is to resort to the reduplication of one of the consonants in the truncate. Reduplicative nicknames were studied in §4.3, where mappings such as *Olga* → *K-oka* and *Ladislao* → *La-l-o* showed that reduplication is a valid strategy to avoid both initial an medial onsetless syllables.

(7) ANCHOR-LEFT(Trunc-Red) » CONTIGUITY

[RED-[(là.ð̞is).(lá$_1$.o)] ↓ [RED-(lá$_1$.o)]	SYLL-WELL (ONSET)	CONTIGUITY (Trunc-Red)
a.☞[(lá.-l̲-o)]		* (l̲)
b. [(lá.o)]	*!	

Tableaux (7) shows that, unlike the input-to-truncate and base-to-truncate faithfulness constraints, Faithfulness(Trunc-Red) can be demoted below all the restrictions included in the SYLL-WELL conjunction, thus allowing for the emergence of the least marked structures found in hypocoristic forms.

In §4.3, I argued that a truncate-reduplicant relation was necessary in order to account for this type of hypocoristics since there are no instances of Spanish reduplicants being attached directly to a base form (cf. *Antonio* → *<u>T</u>-antonio*; *Elisa* → *<u>L</u>-elisa*). In all the documented cases of reduplicative nicknames, the affix must be attached to the truncated form derived from the base. This means that input-to-truncate reduplications are not possibility either (cf. *Antonio* → *<u>T</u>-anto*; *Elisa* → *<u>L</u>-eli*, in which the reduplicants have been attached to a left-anchored input-to-truncate form). Therefore, for reduplication to happen, output-to-output truncation must occur simultaneously.

The previous analyses have been focused on the particular interaction of ONSET with the different kinds of anchoring and faithfulness constraints involved in truncation. This has been so for explanatory reasons; nevertheless, we have yet to explain why not only onsetless syllables but many other marked structures may trigger a change in the mapping affecting truncation.

In order to do this, I have elaborated a list with several variant forms based on a recent survey of hypocoristic forms made by Gutierrez (2009). I have filtered the data in order to register only the forms that have an interest for our present purposes (e.g., the names in which stress placement makes possible to differentiate between stress-anchored and left-anchored hypocoristics less ambiguously). Then, I have kept only the most representative variant forms among those shared by the two Spanish dialects represented in the survey (i.e., Mexican and Chilean). As a result, all the forms in (11) below are not only documented by Gutiérrez in the two dialects but have a significant incidence in both of them. Nevertheless, the sample of reduplicative nicknames in the survey was, as it usually is, very scarce. Thus, all reduplicates have been kept irrespective of the number of documented instances of each form.

(8) Left-anchored vs stress-anchored truncation (adapted from Gutiérrez 2009)

		Non-optimized	Optimized	
Full name	**Left-anchored**	**Stress-anchored**	**Stress-anchored**	**Reduplicative**
Alberto (♂)	Albe(r)	Berto	Beto	-
Alejandro (♂)	Ale	Jandro	Jano~Jando	-
Alfredo (♂)	Alfre	Fredo	Fe[ʝ̞]o	-
Alicia (♀)	Ali	-	Li[tʃ]a	-
Antonio (♂)	Anto	-	To[ɲ]o	To-t-o
Candelaria (♀)	Cande	-	-	-
Carolina (♀)	Caro(l)	-	-	-
Catalina (♀)	Cata	-	-	-
Cecilia (♀)	[s]e[s]i	-	-	-
Consuelo (♀)	Consu	-	[tʃ]elo	-
Dolores (♀)	Dolo	-	Lola	-
Edmundo (♂)	Edmun	-	Mundo	-
Eduardo (♂)	Edu	-	Lalo	-
Elena (♀)	Ele	-	Lena	N-ena
Elisa (♀)	Eli	Lisa	Li[tʃ]a	-
Emilio (♂)	Emi	-	Milo	-
Enrique (♂)	Rique	-		Kike
Ernesto (♂)	Ernes	Nesto	Neto	T-eto
Esperanza (♀)	Espe	-	-	-
Estela (♀)	Este	-	Tela	-
Felipe (♂)	Feli	-	Lipe	P-ipe
Fernando (♂)	Fer	-	Nando	-
Francisco (♂)	Fran[θ]is	-	-	[k]-ico
Gerardo (♂)	[x]era(r)	-	-	L-alo/La-l-o
Gonzalo (♂)	Gon[s]a	-	[tʃ]alo	L-alo
Graciela (♀)	Gra[s]i	-	[tʃ]ela	-
Gregorio (♂)	Grego	-	Go[ʝ̞]o	-
Guadalupe (♀)	Guada	-	Lupe	-
Guillermo (♂)	G[í.ʝ̞]e	-	-	M-emo
Gustavo (♂)	Gusta	-	Ta[β̞]o	-
<H>éctor (♂)	<H>ector	-		T-eto
<H>umberto (♂)	<H>umber	Berto	Beto	-
Ignacio (♂)	Igna	-	Na[tʃ]o	-
Leopoldo (♂)	Leo	-	Polo	-
Leticia (♀)	Leti	-	Ti[tʃ]a	-
Lorena (♀)	Lore	-	-	N-ena
Lucila (♀)	Lu[s]i	-	-	-
Marcelo (♂)	Mar[s]e	-	[tʃ]elo	[tʃ]e-[tʃ]-o

(8$_{cont}$) **Non-optimized** **Optimized**

Full name	**Left-anchored**	**Stress-anchored**	**Stress-anchored**	**Reduplicative**
Margarita (♀)	Marga	-	-	T-ita
Mauricio (♂)	Mauri	-	-	[tʃ]i-[tʃ]o
Maximiliano (♂)	Maxi	-	-	-
Natalia (♀)	Nati~Nata	-	-	-
Refugio (♀)	Refu	-	-	C-uco
Rocío (♀)	Ro[s]i	-	[tʃ]ío	-
Rosario (♀)	Rosa	-	[tʃ]a[j̞]o	-
Socorro (♀)	Soco	-	-	-
Sofía (♀)	Sofi	-	-	-
Susana (♀)	Susi~Susa	-	[tʃ]ana	N-ana
Vicente (♂)	[b]i[s]e	-	[tʃ]ente	-

The survey only confirms Nelson's (1998) insight that, in some languages, resorting to a stress-anchored variant form is a means to avoid a marked structure. Nevertheless, the Spanish case is more complex than the French one in that there are processes of segmental and syllabic optimization involved.

All the forms in the first column in (8) are more marked than their correspondent nicknames in the second column regarding at least some segmental, syllabic or prosodic feature. The form in the second column is, in turn, more marked than the one in the next, and so on. Reduplicative nicknames, displayed in the right-most column, are not only the least marked type of Spanish truncates but one of the less marked forms documented in the language.

Left-anchored hypocoristics improve their input names from a prosodic point of view. As all other types of hypocoristics, they obtain an unmarked bisyllabic trochaic form by demoting anchoring and faithfulness below the prosodic word constraints (e.g. *Alejandro* → *Ale*). On the other hand, non-optimized stress-anchored forms are able to avoid the initial onsetless syllables present in their left-anchored counterparts. Hence, marked structures such as complex clusters (*Al*[fɾ]*edo* → [fɾ]*edo*) and non-nasal codas (*Erne*[s.]*to* → *Ne*[s.]*to*) are permitted in these kind of forms as long as ONSET is not violated.[35] In addition, every non-

[35] But cf. *Ro*[s]*ío* → [tʃi.o]. The interaction between margin and syllabic markedness constraints must be further explored but, any case, examples like this seem to indicate that avoiding a highly marked segmental structure is even more important than avoiding a syllabically marked one.

optimized stress-anchored nickname has an optimized variant form that improves its syllabic structures in certain aspects (e.g. [fɾ]*edo* → [f]*eyo*; *Ne*[s.]*to* → *Neto*). This was explained in tableaux (6) as the demotion of Faithfulness(B-Trunc) below SYLL-WELL'(CODA-COND; *COMPLEX).

At this point it is should be noted that the gapes in the typology in (8) are as telling as the documented forms since they indicate that, if a form does not improve the previous column in any structural aspect, it will not surface. E.g. all the optimized stress-anchored forms need to improve a series of marked structures found in both the left-anchored and the the stress-anchored non-optimized variant forms. Nevertheless, in many cases, there is not such a thing as a non-optimized stress-anchored variant at all. The reason for this is to be found in the higher marking alternatives to left-anchoring that these forms would offer. E.g., some left-anchored nicknames such as *Candelaria* → *Cande* or *Catalina* → *Cata* are well-formed enough, so no other variant forms are needed to replace them.

In most instances, though, there is an optimized-stress anchored variant but a lack of a non-optimized stress-anchored one. This is so because, in these cases, even though a non-optimized stress-anchored nickname would not improve the left-anchored hypocoristic form, an optimized version of it does improve it. See, e.g., mappings such as *Grego*[ɾj]*o* →**Go*[ɾj]*o*~*Go*[j̃]*o* or *Gra*[s]*iela* →*[sj]*ela*~[tʃ]*ela*, in which the optimized stress-anchored forms is able to get rid of the complex cluster in the left-anchored form ([gɾ]*ego* and [gɾ]*a*[s]*i*, respectively) and in an hypothetical non-optimized stress-anchored variant. In other cases, optimization avoids the presence of illegal codas and/or marked segments (e.g.; *Mar*[s]*elo* → *[s]*elo*~[tʃ]*elo;* Gon[s]alo → **Salo*~[tʃ]*alo*; *Vi*[s]*ente* → *[s]*ente*~[tʃ]*ente*; *Susana* → **Sana*~[tʃ]*ana*).[36] Some of these forms avoid a marked syllabic and/or segmental structure found in the left-anchored variant simply by becoming stress-anchored and do not need to undergo any other change to be optimal (e.g.; *Gusta*[β̞]*o* → *Ta*[β̞]*o*; *Felipe* → *Lipe*).

Finally, in a few cases the only way to avoid marked a marked structures in the base form is to resort to reduplicative truncation. This is because either the base form is a bisyllabic

36 Regarding the avoidance of marked continuants as a trigger for the formation of stress-anchored forms, note that a few very informal Spanish clippings seem to follow the same process, as illustrated by [x]*itano* → *Tano* 'gipsy', which avoids the highly marked dorsal fricative in the base. Nevertheless, the word *Gitano* itself is derived form *Egiptano* 'Egyptian', so perhaps this could be another instance of stress-anchoring as an onset repair strategy.

name with an onsetless syllable (e.g.; *<H>ector* → *T-eto*) or the optimization of the stress-anchored name would require too many segmental changes (c.f. *Refu*[x]*io* → **Fu*[x]*io*~**Puco* with *Refu*[x]*io* → *C-uco*).

Although it is possible to find some exceptions to the general tendencies towards unmarked structures in stress-anchored forms described above, almost everyone of them can be attributed to processes of analogy. E.g., a mapping like *Norberto* → *Berto* could rise as an analogy to instances of an actual Emerge of the Unmarked effect such as *Alberto*/*<H>umberto* → *Berto*.

6. Conclusions

This study has set out to explain the typological gaps and the asymmetric phonological and morphological behaviors observed in the most common types of Spanish hypocoristics. It has achieved so by postulating a single grammar with three different types of relations between input and output forms in a way that no other analysis on the topic had yet proposed. The questions that have been addressed throughout the previous chapters will be summarized in the following points.

(a) ***What is the default type of hypocoristics in Spanish?*** Several clues point at the fact that left-anchoring is the default type of truncation in Spanish. First, it is the only productive pattern observed in the formation of non-hypocoristic truncates (e.g.; *bicicl*[é]*ta* 'bike' can be mapped to *bici* but not to **cleta*). Second, while left-anchored hypocoristic truncation is always a possibility, no matter how marked the resulting form becomes (e.g.; *Asunción* → [á]*sun*; *Rodrigo* → *Rodri*), stress-anchored patterns are not always documented alternatives to it (e.g. *Candelaria* → *Cande*, but not **Laria~*Laya~*Lala*; etc). Third, left-anchored forms exhibit the same phonotactics as the native vocabulary of the language, with a few exceptions regarding, mainly, some cases of expressive palatalization (see Kochetov and Alderete 2010 for a cross-linguistic account of expressive palatalization). On the other hand, stress-anchored hypocoristics may display several degrees of structural optimization, which is a phenomenon with no equivalent in non-truncated forms.

The default status of left-anchored nicknames does not imply, however, that this type of anchoring is bound to be more common than stress-anchoring. Nevertheless left-anchored hypocoristics are usually regarded as more formal than the other types, which may be the cause why, as recent studies suggest (Baez Pinal 2002), the use of stress-anchored variant forms has been in decline even in areas where it used to be very popular at a time.

(b) ***Why are there stress-anchored hypocoristics at all?*** First, a distinction must be made between unambiguously stress-anchored truncates and misaligned left-anchored forms. Some Spanish nicknames that are neither stress-anchored nor perfectly left-anchored can be classified as misaligned left-anchored forms according to Alber's (2010) analysis of Czech and Russian truncates. This pattern emerges as a consequence of demoting ANCHOR-LEFT below the structural constraint ONSET in certain dialects (e.g.; *Álvaro* → *Varo*, *Esper*[á]*nza* → *Pera*).

Both perfectly aligned and misaligned stress-anchored forms contrast with stress-anchored nicknames in that they must remain segmentally and syllabically faithful to their inputs, even if this means exhibiting highly marked structures (e.g. *Adalb*[é]*rto* → *Dalber*, but not **Dabe*). Many stress-anchored nicknames, on the other hand, have the option to become structurally optimized (e.g. *Anastasio* → *Tasio~Ta*[tʃ]*o*). The crucial observation is that non-optimized stress-anchored forms are allowed to surface only if they improve their left-anchored counterparts in certain structural aspects, in a similar way as misaligned left-anchored forms are allowed to surface in some dialects as long as they improve their correspondent perfectly left-anchored forms.

E.g. *Susana* cannot be mapped to *Sana* because it does not fare better than *Susa* neither from a syllabic nor a segmental point of view. On the other hand, *Susana* → [tʃ]*ana* is a possible mapping since the marked continuant segment that would surface in the left-anchored forms is transformed into an optimal onset. Crucially, the issue cannot be solved by optimizing the left-anchored nickname into * [tʃ]*u*[tʃ]*a*, even though this form is a perfectly well-formed nickname in as stress-anchored mapping such as *María-Jesús* (♀) → [tʃ]*u*[tʃ]-*a*.

Finally, some names cannot be optimized neither by being turned into left-anchor nor stress-anchored nicknames. The only strategy to avoid these marked structures is reduplicative truncation (e.g. *Ana* → *<u>N</u>-ana)*. Not only can this type of truncation provide an onset to forms that could not obtain it otherwise but it also permits a greater level of segmental optimization than optimized stress-anchored forms. Cf. e.g. *Santiago* → [tʃ]*ago* with *Olga* → *<u>C</u>-oca*. In the former example, the voiced dorsal obstruent of the stress-anchored form is kept while, in the latter, the same segment must be optimized into a voiceless stop.

These data show us two important properties of stress-anchored hypocoristics. First, anchoring variation is not arbitrary; i.e, it does not depend on an unmotivated reranking of the edge-anchoring and stress-anchoring constraints but on the demotion on certain faithfulness constraints below markedness, probably due to a relaxation in the formality of the register (left-anchored nicknames are seen as more informal than full names, optimized stress-anchored names as more informal than left-anchored ones, and reduplicants as the most informal of all). Second, the mapping of the two main types of hypocoristics must differ in some aspect, since every type of hypocoristic (left-anchored, stress-anchored and reduplicative), exhibit a different degree of Emergence of the Unmarked (Prince and McCarthy 1994a).

(c) ***What kind of mapping do each type of truncation have?*** Not only do left-anchored truncates exhibit the lowest degree of Emergence of the Unmarked (they only allow for the demotion of FAITHFULNESS below the prosodic word constraints), they are also insensitive to input stress (e.g. *Vic*[é]*nte* → *Vice*) as well as to syllabic structure (*V*[jo]*leta* → *V*[í.o]. Consequently, this type of nicknames must be directly mapped from the underlying representation. The difference in stress-anchoring and left/right anchoring between forms must be explained due to perceptual properties alone. A ranking in which ANCHOR-STRESS and ANCHOR-RIGHT dominate ANCHOR-LEFT is, thus, a consequence of the perceptual salience of stressed and final vowels, as reflected in the use of assonance in the Spanish poetic tradition. Left-anchored hypocoristics, being derived from underlying representations, are, for obvious reasons, not affected by these perceptual properties.

Apart from being sensitive to input stress, stress-anchored hypocoristics display other features that are characteristic to output-to-output mappings such as different degrees of Emerge of the Unmarked effects (Benua 1995, 1997). Such effects has been shown to be caused by an output-to-output correspondence relation in the analyses of certain kinds of Spanish nominal derivations carried out by, e.g, Colina (2009) and Lloret and Mascaró (2006).

There is still one more kind of mapping to account for: the one affecting reduplicative nicknames. While, as it has been just discussed, stress-anchored forms are the result of a base-to-truncate relation, we need to postulate a truncate-reduplicant relation in order to account for the characteristics of reduplicant names. First, there are no instances of Spanish reduplicants being attached directly to a base form (cf. *Isabel* → **S*-*isabel*). Second, input-to-truncate reduplications are not documented either (cf. *Isa* → **S*-*isa*). Therefore, for reduplication to happen, output-to-output truncation must occur simultaneously.

Hence, the following relations between phonological representations are at play in the processes of Spanish nickname formation: left-anchored nicknames are the product of an input-to-truncate relation, stress-anchored nicknames are the product of a base-to-truncate relation, and reduplicative nicknames are obtained from a truncate-reduplicant mapping.

(1) The different mappings of hypocoristic forms

Left-anchored forms

I-Trunc Faith

Input → **T**runcate

Stress-anchored forms

Input **T**runcate

O-O Ident ↓ ↗ *B-T Ident*

Base

Reduplicative forms

Red-Trunc Faith

Input ↔ **T**runcate

O-O Ident ↓ ↗ *B-T Ident*

Base

(d) ***How does the switch of the type of mapping take place?*** Some authors (e.g. Lappe 2006) have argued for the necessity of both output-to-output and input-to-output mappings to account for some variant truncate forms in languages like English. On the one hand, a name such as *Patricia* can generate the stress-anchored nickname [trí.ʃə] by means of an output-to-output correspondence relation between base and truncated form. One the other hand, the left-anchored variant form [pæt] must have a direct access to the underlying representation of the name, from where it draws its full vowel.

While I do not know any satisfactory explanation for the cases of mapping variation in English, in Spanish the reason for this switch must be found in the demotion of faithfulness below markedness required in hypocoristic formation. This phenomenon can be explained from a pragmatic point of view. Due to the generally unequivocal referents of proper names, they are expected to produce less ambiguity than common names and are, therefore, allowed to generate a greater mismatch between input and output. Nevertheless, input-to-output mappings impose certain limitations to the extent to which faithfulness and anchoring can be demoted in the grammar. In order to overcome this impediment, some types of derivatives such as truncates seem to have, under these circumstances, the power to change their input so that an output-to-output correspondence relation is held instead.

The possibility of a change in mapping must be found in the very particular morphological operation involved in truncation. To begin with, not all scholars agree in classifying truncation as a word formation process. First, it is debatable whether truncation does or does not involve any change in meaning (see Alber and Arndt-Lappe (2012) for a discussion on the semantics of truncation). Second, truncation differs from derivation proper in that the former does not require any kind of affixation.

In fact, affixation processes seem to be at odd with the default type of hypocoristics. E.g., while vowel augmentation in left-anchored (i.e., input-to-truncate) forms is generally prohibited (e.g. *Consuel-o* (♀) → **Cons-a*), stress-anchored (i.e., base-to-truncate) forms usually allow for it (e.g. *Consuel-o* (♀) → [tʃ]*él-a*). Hence another motivation for the default input-to-truncate mapping to switch into a base-to-truncate one.

The relevant issue, however, is that, even though Spanish truncation has a default input-to-truncate mapping, all nicknames can have a free-standing form (i.e. a non-truncated name) as their input. Therefore, the most important requisite to generate an output-to-output correspondence relation is always satisfied.

Similar considerations could be said about the process of hypocoristic reduplication. Everything points to the fact that reduplication is a phonologically motivated process that can be activated whenever a marked structure needs to be avoided. As previously discussed, reduplicative affixes must attach to a truncated form already derived from the base, thus giving rise to a further step in the mapping process and, as a consequence, a further degree of unmarkedness. Just as stress-anchoring is an alternative to left-anchoring in contexts in which the grammar of the latter cannot produce the desired unmarked structures, reduplication is an alternative to stress-anchoring in equivalent situations.

The following diagram represents all the possible steps in the derivation of Spanish truncates. The left column exemplifies the process with one the names discussed in previous chapters. The right column shows how every new mapping reduces the number of segments in the inventory that are allow to surface, thus giving rise to a gradual process of Emerge of the Unmarked.

(2) Emergence of the Unmarked as a result of the concatenation of phonological mappings

Input	/RED-gonθalo/	{t, d, ɟj, k, x, g, m, n, ɲ, s, tʃ, θ, b, f, p, ɾ, l, r}
↓		
Base	[RED-goṇ.(θá.lo)]	{t, d, ɟj, k, x, g, m, n, ɲ, s, tʃ, θ, b, f, p, ɾ, l, r}
↓		
Trunc	[RED-(tʃá.lo)]	{t, ɟj, k, g m, n, ɲ tʃ, b, p, l }
↕		
Red	[(l̠-á.lo)]	{t, ɟj, k, m, n tʃ, p, l }

These reflections raise tome theoretical issues such as the need to formally account for the process of mapping switch and the question regarding how many mapping levels a grammar can handle. This kind of problems are being tackled by authors such as Bermúdez-Otero (2006) in the ongoing research program of Stratal OT.

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