PROSODIC AND SEGMENTAL UNMARKEDNESS IN SPANISH TRUNCATION[*]

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0. Introduction

There are two main types of hypocoristics in Spanish. Type-A comprises Truncated Forms (TF) that preserve segmental material from the initial syllables of the Source Form (SF), whereas Type-B subsumes truncated forms that resemble the final syllables of the source form.

(1)

	SF	*Type-A*[1]	*Type-B*[2]	
	xe.sús	xé.su(s)	čú.čo	Jesús
	el.βí.ra	él.βi	bí.la	Elvira
	xo.sé.fa	xó.se	čé.pa	Josefa
	le.o.ká.dja	lé.o	ká.ya.	Leocadia

In addition to preserving different parts of SF, these processes also differ in the degree of featural faithfulness between SF-segments and their TF-correspondents. Note that whereas the segments of SF that are preserved in a Type-A hypocoristic always have featurally-identical correspondents (2a), it is often the case that the segments of SF that are preserved in a Type-B hypocoristic have featurally unfaithful correspondents (2b).

(2) a. [x o . s é . f a] — [x ó . s e] — *Jose < Josefa*

b. [x o . s é . f a] — [č é . p a] — *Chepa < Josefa*

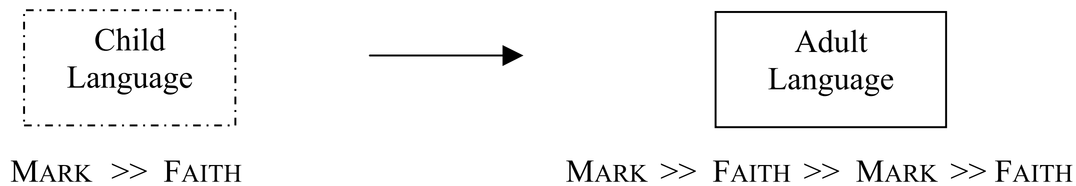
SF / *TF*

In this paper, I develop a constraint-based analysis that shows that these two truncation processes represent two different degrees of Emergence of the Unmarked (McCarthy and Prince 1994). Whereas Type-A hypocoristics achieve unmarkedness at the prosodic level only (e.g. a minimal prosodic word), Type-B hypocoristics further achieve unmarkedness at the segmental level (e.g. onset optimization). Spanish hypocoristics are equivalent to a MinWd because they must contain no more than a single binary foot. As a result, when the source form exceeds this limit, some of the segmental material may not be preserved. Type-B truncated forms display an additional tendency towards unmarkedness by favoring CV-syllables with optimal peaks and margins. This yields the selection of low-sonority segments to fill the syllable onset and high-sonority segments to fill the nucleus. The sound substitutions exhibited by Type-B hypocoristics (e.g. [č] < [s], [p] < [f], [k] < [x], [l] < [r]) are a way to optimize the syllable by parsing more harmonic onsets. The prosodic and segmental unmarkedness exhibited by truncated forms emerges because some of the faithfulness constraints that demand identity between SF and TF are outranked by markedness constraints. This tendency to rank MARKEDNESS over FAITHFULNESS yields some resemblance between truncation and child language.

1. Unmarkedness in child language

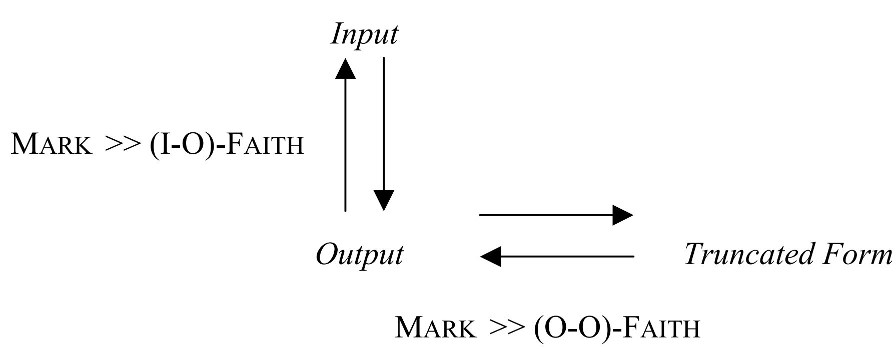
Gnanadesikan (1995) describes language acquisition as a process that promotes FAITHFULNESS, from an initial state where all MARKEDNESS constraints are dominant, to reach an adult state where MARKEDNESS and FAITHFULNESS are balanced by being interspersed in the ranking (see 3 below). In the early stages of acquisition, the dominant MARKEDNESS constraints are able to bar marked structures from the child's output. At that point, MARKEDNESS is directly related to the child's ability to produce language. The general ranking MARKEDNESS >> FAITHFULNESS reflects the rudimentary ability of the child to produce sophisticated contrasts. However, since contrasts are necessary in order to support the rich lexicon of adult language, the child acquiring the language must improve her/his linguistic ability in order to approximate adult language more closely. As her/his ability becomes more sophisticated, (s)he is able to produce more marked structures. This progression in the acquisition process is reflected by the ascension of FAITHFULNESS constraints, which come to dominate some of the MARKEDNESS constraints.

(3) Acquisition = Promotion of FAITH



Truncatory morphology shares with intermediate stages of language acquisition this tendency for MARKEDNESS to outrank FAITHFULNESS. Nevertheless, it is important to point out that the faithfulness constraints that are dominated in truncation are not the same faithfulness constraints that are dominated in the stages of acquisition. Whereas the unmarkedness of child language results from the ranking MARKEDNESS >> (Input-Output)-FAITHFULNESS, the unmarkedness of truncation results from a similar but distinct ranking since the dominated faithfulness constraints are of the kind that relate two output forms: MARKEDNESS >> (Output-Output)-FAITHFULNESS.[3]

(4)



Given that (I-O)-FAITHFULNESS and (O-O)-FAITHFULNESS are independent constraint families, they may be independently ranked with respect to MARKEDNESS. According to this, the unmarkedness of truncated forms does not arise as a reversal of the acquisition process that demotes FAITHFULNESS in favor of MARKEDNESS. Rather, the adult grammar has two correspondence dimensions, each one of them governed by its own set of correspondence constraints, which are free to interact with the rest of constraints in the grammar. To illustrate this, consider the case of a markedness constraint such as *COMPLEX (Prince and Smolensky, 1993).

(5) *COMPLEX *No Complex Syllable Position Nodes*
Syllable position nodes do not branch.

The fact that onset clusters are possible in Spanish (e.g. [a.le.xan.(drí.na)] 'Alejandrina') indicates that *COMPLEX is outranked by an (I-O)-FAITHFULNESS constraint (7a); specifically, MAX(I-O), the constraint that militates against deletion of input segments (McCarthy and Prince 1995).

(6) MAX(I-O): *Maximization of the Input*
Every element in the input has a correspondent in the output.

(7) MAX(I-O) >> *COMPLEX

Input: /alexandrina/	MAX(I-O)	*COMPLEX
a. ☞ [a.le.xan.(drí.na)]		*
b. [a.le.xan.(dí.na)]	r !	

Nevertheless, the effects of *COMPLEX may still be seen in the grammar when the dominant (I-O)-FAITHFULNESS constraint is not relevant. Such is the case of truncation. For instance, in Type-B hypocoristics the resulting TF may not contain any onset clusters (e.g. [(dí.na)] < [a.le.xan.(drí.na)] 'Alejandrina'). This is because, even though *COMPLEX is dominated by MAX(I-O), it ranks above MAX(SF-TF), the specific (O-O)-FAITHFULNESS constraint that prohibits deletion in the output-output correspondence dimension where hypocoristics are generated (9b).

(8) MAX(SF-TF): *Maximization of the Source Form*
Every segment in SF has a correspondent in TF.

(9) *COMPLEX >> MAX(SF-TF)

SF:	[a.le.xan.(drí.na)]	*COMPLEX	MAX(I-O)
a.	[(drí.na)]	* !	alexan
b. ☞	[(dí.na)]		alexan r

This is a clear Emergence-of-the-Unmarked pattern, where a markedness constraint is blocked by a faithfulness constraint in the input-output correspondence dimension but its effects emerge in output-output correspondence.

2. Prosodic unmarkedness in truncatory morphology

Following Benua (1995), I assume that truncation reduces a source form to the size of the unmarked minimal word (MinWd), which meets all of the requirements imposed by the Prosodic-Word Restrictor constraints (McCarthy and Prince 1994).

(10) *Prosodic-Word Restrictor Constraints = PWR*

PARSE-SYLL: *Parse Syllables*
All syllables are parsed into feet.

FT-BIN: *Foot Binarity*
Feet are binary at some level of analysis (μ, σ)

ALL-FT-R:[4] *All Feet Right*
Every foot stands in final position in the PWd.

In addition to the Prosodic-Word Restrictor constraints, Spanish hypocoristics are subject to a constraint requiring left-headedness within the foot.

(11) FT-FORM(Trochaic): *Trochaic Foot Form*

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

Strict compliance with all of these prosodic constraints yields a MinWd that is built on a single syllabic trochee (e.g. $[(\acute{\sigma}\sigma)]_{PWd}$. Note that any candidate that preserves more than two syllables is doomed for it can not help running afoul of at least one the Prosodic-Word Restrictor constraints (12a-d).

(12) FT-BIN, PARSE-SYLL, ALL-FT-R, FT-FORM(Trochaic)

SF: $\sigma\sigma\sigma$	FT-BIN	PARSE-SYLL	ALL-FT-R	FT-FORM(Trochaic)
a. $[(\grave{\sigma})_{F2}(\acute{\sigma}\sigma)_{F1}]_{PWd}$	* !		F_2: $\sigma\sigma$	
b. $[(\grave{\sigma}\sigma)_{F2}(\acute{\sigma})_{F1}]_{PWd}$	* !		F_2: σ	
c. $[(\acute{\sigma}\sigma)_{F1}\sigma]_{PWd}$		* !	F_1: σ	
d. $[\sigma(\acute{\sigma}\sigma)_{F1}]_{PWd}$		* !		
e. ☞ $[(\acute{\sigma}\sigma)_{F1}]_{PWd}$				
f. $[(\sigma\acute{\sigma})_{F1}]_{PWd}$				* !

This tendency to reduce SF to a MinWd comes at the cost of violating the anti-deletion constraint MAX(SF-TF). Under the ranking FT-BIN, PARSE-SYLL, ALL-FT-R >> MAX(SF-TF), identity between SF and TF often needs be sacrificed in order to obtain the unmarked PWd. Only when SF does not exceed a binary foot, TF may provide a correspondent for every element in SF (13a).

(13) FT-BIN, PARSE-SYLL, ALL-FT-R, FT-FORM(Troc) >> MAX(SF-TF)

SF:	[(r̄ó.sa)]	FT-BIN	PARSE-SYLL	ALL-FT-R	FT-FORM(Troc)	MAX(SF-TF)
a.	☞ [(r̄ó.ča)]					
b.	[(r̄ó).ča]	* !	*	*	*	
c.	[r̄o.(čá)]	* !	*		*	

But whenever SF exceeds this limit, it is impossible for TF to provide a correspondent for every element in SF given that this would cause a violation of one of the undominated Prosodic-Word Restrictor constraints (14a, 15a). Under these circumstances, some of the segmental material in SF has to be sacrificed. Truncation is then the price that must be paid in order to obtain prosodic unmarkedness.

(14) FT-BIN, PARSE-SYLL, ALL-FT-R, FT-FORM(Troc) >> MAX(SF-TF)

SF:	[el.(βí.ra)]	FT-BIN	PARSE-SYLL	ALL-FT-R	FT-FORM(Troc)	MAX(SF-TF)
a.	[el.(βí.la)]		* !			
b.	☞ [(él.βi)]					ra

(15) FT-BIN, PARSE-SYLL, ALL-FT-R, FT-FORM(Troc) >> MAX(SF-TF)

SF:	[el.(βí.ra)]	FT-BIN	PARSE-SYLL	ALL-FT-R	FT-FORM(Troc)	MAX(SF-TF)
a.	[el.(βí.la)]		* !			
b.	☞ [(bí.la)]					el

In Type-A hypocoristics, the right edge of SF is sacrificed in order to preserve the first two syllables of SF (14b). In Type-B hypocoristics, preference is given to those segments parsed by the main-stressed foot of SF (15b). According to this, even though both truncation processes share the partial ranking established above, they differ with respect to other constraints.

3. Type-A hypocoristics

In Type-A hypocoristics, the segments that are preserved in the MinWd constitute a continuous string that mimics the first two syllables of SF (e.g. [(djó.ni)] < [djo.(ní.sjo)] 'Dionisio'). This state of partial identity between SF and TF is secured by the high-ranking status of ANCHOR-L and I-CONTIGUITY (McCarthy and Prince, 1995).

(16) ANCHOR(SF-TF)L: *Anchor the Left Edge of the Source Form*
Any element at the left periphery of SF has a correspondent at the left periphery of TF.

(17) I-CONTIGUITY: *Input Contiguity* "No Skipping"
The portion of TF standing in correspondence forms a contiguous string.

Like MAX(SF-TF), ANCHOR(SF-TF)L and I-CONTIGUITY are faithfulness constraints that enforce the identity between SF and TF. It is true that the optimal TF may rarely be identical to SF because the set of Prosodic-Word Restrictor constraints (PWR) dominates MAX(SF-TF). Nevertheless, TF must still bear a certain degree of similarity with respect to SF because ANCHOR(SF-TF)L and I-CONTIGUITY outrank PWR. Under this ranking, the optimal TF must be a MinWd formed with the correspondents of the two leftmost syllables of SF (18a).

(18) ANCHOR(SF-TF)L, I-CONTIGUITY >> PWR >> MAX(SF-TF)

SF:	[mar.(θé.la)]	ANCHOR(SF-TF)L	I-CONTIGUITY	PWR	MAX(SF-TF)
a. ☞	[(már.θe)]				la
b.	[mar.(θé.la)]			* !	
c.	[(már.la)]		* !		θe
d.	[(θé.la)]	* !			már

SF:	[djo.(ní.sjo)]	ANCHOR(SF-TF)L	I-CONTIGUITY	PWR	MAX(SF-TF)
a. ☞	[(djó.ni)]				sjo
b.	[djo.(ní.sjo)]			* !	
c.	[(djó.sjo)]		* !		
d.	[(ní.sjo)]	* !			

There are some cases, however, when TF may not remain completely identical to the first two syllables of SF. When the peninitial syllable is closed by a consonant of the set [r, l, n, s], that segment may be optionally preserved (19a). If it is a consonant other than [r, l, n, s] that closes the peninitial syllable of SF, that segment is always left without a correspondent in TF (19b). Finally, whenever the peninitial syllable of SF contains a diphthong, all segments after the first member of the diphthong are left out (19c).

(19)	a.	[r̄i.(kár.δo)]	→	[(r̄í.ka)]	~	[(r̄í.kar)]	Ricardo
		[r̄o.(δól.fo)]	→	[(r̄ó.δo)]	~	[(r̄ó.dol)]	Rodolfo
		[ar.(mán.do)]	→	[(ár.ma)]	~	[(ár.man)]	Armando
		[Xe.(sús)]	→	[(Xé.su)]	~	[(Xé.sus)]	Jesus
	b	[kon.θep.(θjón)]	→	[(kón.θe)]			Concepción
		[da.(βíδ)]	→	[(dá.βi)]			David
	c.	[da.(njél)]	→	[(dá.ni)]			Daniel
		[Xa.(βjér)]	→	[(Xá.βi)]			Javier
		[(Xú.lja)]	→	[(Xú.li)]			Julia
		[ma.(nwél)	→	[(má.nu)]			Manuel

These are the conspicuous effects of markedness constraints that regulate syllable structure. The constraints NO-CODA and CODA-COND (Prince and Smolensky 1993, McCarthy and Prince 1993a) have the effect of barring highly marked segments from the right edge of the syllable. *COMPLEX, on the other hand, prohibits clusters, both of consonants and vocoids, under a syllable position node.

(20) *Syllable Well-formedness Constraints = Syll-Well*

NO-CODA: *No Syllable Codas*
Syllables do not have codas.

CODA-COND: *Coda Condition*
Only coronal sonorants and /s/ may be parsed in the coda.[5]

*COMPLEX: *No Complex Syllable Position Nodes*
Syllable position nodes do not branch.

The alternation illustrated in (19a) depends on whether the grammar relies on the constraint NO-CODA or the more relaxed CODA-COND in order to filter out marked segments from the right syllable edge. For dialects where TF does not preserve the coda of the second syllable of SF, the markedness constraint NO-CODA must rank above both MAX(SF-TF) and CODA-COND, given that a coda segment is lost regardless of its sonority.[6]

(21) NO-CODA >> MAX(SF-TF), CODA-COND

SF: [r̄i.(kár.δo)]	NO-CODA	MAX(SF-TF)	CODA-COND
a. [(r̄í.kar)]	* !	δo	
b. ☞ [(r̄í.ka)]		rδo	
SF: [Xe.(sús)]			
a. [(Xé.sus)]	* !	δ	
b. ☞ [(Xé.su)]		s	

By contrast, for those dialects that allow the consonants [r, l, n, s] to close the second syllable of TF, it is CODA-COND that outranks MAX(SF-TF). Furthermore, MAX(SF-TF) dominates NO-CODA, given that preservation of the coda segment works to the benefit of (SF-TF)Identity. This is illustrated in tableau (22). The same ranking accounts for the data in (19b) since, with the exception of /s/, all obstruents have too little sonority to be acceptable codas. Tableau (23) illustrates this case.

(22) CODA-COND >> MAX(SF-TF), NO-CODA

SF: [r̄i.(kár.δo)]	CODA-COND	MAX(SF-TF)	NO-CODA
a. ☞ [(r̄í.kar)]		δo	*
b. [(r̄í.ka)]		r ! δo	
SF: [Xe.(sús)]			
a. ☞ [(Xé.sus)			*
b. [(Xé.su)]		s !	

(23) CODA-COND >> MAX(SF-TF), NO-CODA

SF: [kon.θep.(θjón)]	CODA-COND	MAX(SF-TF)	NO-CODA
a. [(kón.θep)]	* !	θjon	*
b. ☞ [(kón.θe)]		pθjon	
SF: [da.(βíδ)]			
a. [(dá.βiδ)]	* !		*
b. ☞ [(dá.βi)]		δ	

The constraint *COMPLEX is responsible for the simplification of the branching nucleus of the examples in (19c). Given that *COMPLEX also outranks MAX(SF-TF), one of the members of the diphthong must be dispensed with. The decision of which of the two members of the diphthong is to be preserved depends on the interaction of *COMPLEX with the faithfulness constraint I-CONTIGUITY. Interestingly, the winner is not the vocoid of higher sonority, as one would expect, but invariably the first member of the diphthong (e.g. [(má.nu)] < [ma.(nwél)] 'Manuel'). The reason for this is that deleting the second member of the diphthong does not entail the skipping of an internal segment (24b), as it would be the case if the first vocoid were disposed of (24c). According to this, I-CONTIGUITY dominates *COMPLEX.

(24) I-CONTIGUITY >> *COMPLEX >> MAX(SF-TF)

SF:	[da.(njél)]	I-CONTIGUITY	*COMPLEX	MAX(SF-TF)
a.	[(dá.nje)]		* !	l
b. ☞	[(dá.ni)]			el
c.	[(dá.ne)]	* !		j l
SF:	[ma.(nwél)]			
a.	[(má.nwe)]		* !	l
a. ☞	[(má.nu)]			el
b.	[(má.ne)]	* !		w l

The fact that marked syllable structure in the initial syllable of SF is never simplified corroborates this resistance to skipping internal segments. Whether the initial syllable of SF contains a complex onset (e.g. [(frán.θis)] < [fran.(θís.ko)] 'Francisco'), a branching nucleus (e.g. [(djó.ni)] < [djo.(ní.sjo)] 'Dionisio'), or an unacceptable coda [(íX.na)] < [(iX.(ná.θjo)] 'Ignacio'); all segments parsed by the initial syllable of SF always have a correspondent in TF. According to this observation, the markedness constraint SYLL-WELL, which I use as an abbreviation for NO-CODA/CODA-COND and *COMPLEX, must be dominated by the faithfulness constraint I-CONTIGUITY.

(25) I-CONTIGUITY >> SYLL-WELL >> MAX(SF-TF)

SF:	[fran.(θís.ko)]	I-CONTIGUITY	SYLL-WELL	MAX(SF-TF)
a. ☞	[(frán.θis)][7]		*	ko
b.	[(fán.θis)]	* !		r ko
SF:	[djo.(ní.sjo)]			
a. ☞	[(djó.ni)]		*	sjo
b.	[(dó.ni)]	* !		j sjo

SF: [iX.(ná.θjo)]	I-CONTIGUITY	SYLL-WELL	MAX(SF-TF)
a. ☞ [(íX.na)]		*	θjo
b. [(í.na)]	* !		X θjo

Tableau (25) shows that whenever the initial syllable of SF contains marked structure, nothing can be done in order to reduce its markedness. Because I-CONTIGUITY dominates SYLL-WELL, preserving the offending segment is better than skipping it (25a).

By contrast, when it is the peninitial syllable of SF that contains marked syllable structure, it is possible to dispose of it as long as no internal segment is skipped. In the following tableau, candidate (26c) is the winner because it simplifies as much marked syllable structure as possible without disturbing the contiguity of the melodic string. All other candidates either contain a syllable that is more marked (26a,b) or end up skipping an internal segment in the attempt to avoid violations of SYLL-WELL (26d,e).

(26) I-CONTIGUITY >> SYLL-WELL >> MAX(SF-TF)

SF: [ga.(βrjél)]	I-CONTIGUITY	SYLL-WELL	MAX(SF-TF)
a. [(gá.βrjel)]		* ! *	
b. [(gá.βrje)]		* ! *	l
c. ☞ [(gá.βri)]			el
d. [(gá.βre)]	* !	*	j l
e. [(gá.βrel)]	* !	*	j

This completes my account of Type-A hypocoristics. Next, I turn to analyze Type-B hypocoristics, which I intend to show, are a stage further ahead in the Emergence of the Unmarked, where the constraints that enforce unmarkedness dominate more faithfulness constraints.

4. Type-B hypocoristics

A remarkable feature of Type-B truncated forms is their tendency to preserve those segments that are contained in the main-stressed foot of SF. Depending on the stress pattern of SF, TF preserves segments that come mainly from the last, the last two or the last three syllables of SF. The following examples are representative.

(27) a. Ultimately-stressed SF's:

[be.a.(trís)]$_{PWd}$	→	[(tí.ča)]$_{PWd}$	Beatriz
[eŋ.kar.na.(sjón)]$_{PW}$d	→	[(čó.na)]$_{PWd}$	Encarnación
[se.βas.(tján)]$_{PWd}$	→	[(čá.no)]$_{PWd}$	Sebastián

b. Penultimately-stressed SF's:

[a.(lí.sja)]$_{PWd}$	→	[(lí.ča)]$_{PWd}$	Alicia
[ar.(mán.do)]$_{PWd}$	→	[(mán.do)]$_{PWd}$	Armando
[kar.(ló.ta)]$_{PWd}$	→	[(ló.ta)]$_{PWd}$	Carlota

c. Antepenultimately-stressed SF's:

[fe.(lí.si).to]$_{PWd}$	→	[(lí.čo)]$_{PWd}$	Felícito
[i.(pó.li).to]$_{PWd}$	→	[(pó.lo)]$_{PWd}$	Hipólito
[(mé.li).δa]$_{PWd}$	→	[(mé.la)]$_{PWd}$	Mélida

These data show a strong drive to preserve those elements parsed under the head of the PWd. Prosodic-head maximization is accomplished when output string S_2 provides a correspondent for every segment contained in a prosodic head of input string S_1, (Alderete, 1995). The constraint HEAD-MAX is defined as follows.

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

Every element contained in a prosodic head in S_1 must have a correspondent in S_2.

The specific version of HEAD-MAX that is at play in Type-B truncated forms is HEAD(PWd)MAX as defined below.

(29) HEAD(PWd)MAX: *Maximize the Head of the PWd*

Every element contained in the head of the PWd (e.g. the main-stressed foot) of SF must have a correspondent in TF.

But clearly, HEAD(PWd)MAX is not perfectly obeyed in Type-B truncated forms. Some of the segments in the main-stressed foot of SF lack a correspondent in TF. Specifically, the second element of a complex onset is deleted (e.g. [(tán.čo)] < [(trán.si).to] 'Tránsito'), the high vocoid of a diphthong is lost (e.g. [(tén.ča)] < [or.(tén.sja)] 'Hortensia') and except for nasals, no other consonant may be parsed in the coda (e.g. [(bé.to)] < [al.(βér.to)] 'Alberto).[8] The loss of these segments, which serves the purpose of simplifying syllable structure in favor of unmarked CV-syllables, is linked to the following syllable well-formedness constraints.

(30) *Syllable Well-formedness Constraints = Syll-Well*

S-CODA-COND: *Strict Coda Condition*

No place features in the coda.

*COMPLEX: *No Complex Syllable Position Nodes*

Syllable position nodes do not branch.

The reason why not every segment in the main-stressed foot of SF may be preserved in TF is because S-CODA-COND and *COMPLEX outrank HEAD(PWd)MAX. Under this ranking, S-CODA-COND bars all place-specified consonants from the coda and *COMPLEX forces the simplification of onset clusters and branching nuclei (31d). Furthermore, since marked syllable structure is simplified at the expense of deleting even internal segments, the markedness constraints must also dominate I-CONTIGUITY. Hereafter I will use SYLL-WELL to abbreviate S-CODA-COND and *COMPLEX. Tableau (31) below illustrates the effects of this ranking.

(31) SYLL-WELL >> HEAD(PWd)MAX , I-CONTIGUITY

SF:	[(fáws.ta)]	SYLL-WELL	HEAD(PWd)MAX	I-CONTIGUITY
a.	[(fáws.ta)]	* ! *		
b.	[(fás.ta)]	* !	w	*
c.	[(fáw.ta)]	* !	w	*
d. ☞	[(fá.ta)]		ws	* *
SF:	[(bráw.ljo)]			
a.	[(bráw.ljo)]	* ! * *		
b.	[(bráw.lo)]	* ! *	j	*
c.	[(brá.lo)]	* !	w j	* *
d. ☞	[(bá.lo)]		r w j	* * *

The fact that SYLL-WELL outranks I-CONTIGUITY gives rise to one of the major distinctions between Type-B hypocoristics and their Type-A counterparts, which obey the reversed ranking. Whereas in Type-A hypocoristics, internal segments may not be skipped in order to simplify marked syllable structure (e.g. [(ál.fre)] < [al.(fré.δo)] 'Alfredo'), in Type-B hypocoristics, this option is very much exploited (e.g. [(fé.yo)] < [al.(fré.δo)] 'Alfredo').

It also needs to be explained why it is always the first member of an onset cluster that is preserved and the high vocoid of a diphthong that is lost. The answer to this question has to do with the willingness of the segment in question to be parsed as a syllable margin or peak. Prince and Smolensky (1993) propose the Universal Syllable Margin and Peak Hierarchies to capture the fact that the lower the sonority of a segment, the greater its willingness to be parsed as a margin and conversely, the higher its sonority, the greater its willingness to be parsed as a peak. (*t* = a segment of minimal sonority; *a* = a segment of maximal sonority)

(32) *Universal Margin Hierarchy* (Prince and Smolensky 1993)
*M/*a* >> *M/*i* >> . . . >> *M/*t*

(33) *Universal Peak Hierarchy* (Prince and Smolensky 1993)
*P/*t* >> . . . >> *P/*i* >> *P/*a*

Anti-associational constraints of the type *M/α militate against the parsing of segments as syllable margins, whereas anti-associational constraints of the type *P/α penalize the parsing of segments as syllable peaks. According to the Universal Margin Hierarchy, parsing a low-sonority segment as a syllable margin is better than parsing a high-sonority segment in that position because such association entails the violation of a lower-ranking anti-margin constraint. Conversely, the Universal Peak Hierarchy dictates that parsing a low-sonority segment as a syllable peak is worse than parsing a high-sonority segment in that position because such association entails the violation of a higher ranking anti-peak constraint. Given that maximizing the head of the PWd requires the parsing of certain segments as syllable margins, the anti-margin constraints *M/α must be dominated by HEAD(PWd)MAX.

(34) SYLL-WELL >> HEAD(PWd)MAX >> *M/α

SF: [a.le.xan.(drí.na)]	SYLL-WELL	HEAD(PWd)MAX	*M/r	*M/n	*M/d
a. [(drí.na)]	* !		*	*	*
b. ☞ [(dí.na)]		r		*	*
c. [(rí.na)		d	* !		

Under the pressure of *COMPLEX, one of the SYLL-WELL constraints, the optimal TF must avoid the branching onset included in the main-stressed foot of SF. Candidate (34a) is the first one to be discarded for it makes no effort to meet this condition. Candidates (34b) and (34c) illustrate two different ways to satisfy *COMPLEX. But only candidate (34b) abides by the sonority considerations enforced by *M/α. It optimizes the margin of the first syllable by selecting the segment of lower sonority.

Given that Type-B truncated forms also maximize the main-stressed foot of SF at the expense of parsing certain segments as syllable peaks, it must be that HEAD(PWd)MAX also outranks the anti-peak constraints *P/α. High-ranking SYLL-WELL forces the simplification of complex nuclei and *P/α favors the preservation of the vocoid of higher sonority; the most harmonic peak (35b).

(35) SYLL-WELL >> HEAD(PWd)MAX >> *P/α

SF:	[a.de.(láj.δa)]	SYLL-WELL	HEAD(PWd)MAX	*P/i	*P/a
a.	[(láj.la)]	* !		*	* *
b. ☞	[(lá.la)]		j		* *
c.	[(lí.la)]		a	* !	*

Summing up, the optimal Type-B truncated form is a MinWd that is as faithful to the main-stressed foot of SF as possible. When the main-stressed foot of SF contains branching syllable constituents, TF may not provide a correspondent for the two segments under the branching node. A selection is made according to universal principles of markedness, which favor the parsing of low-sonority segments as syllable margins and high-sonority segments as syllable peaks.

Gnanadesikan (1995) reports similar phenomena in child phonology. At an intermediate stage of acquisition, the child tends to produce unmarked syllables that are optimal not only in the number of segments but also in the quality of those segments. The optimal syllable is one that has a single consonant of low sonority sitting at its left margin and this segment is followed by a single vowel. When the child's input, which is the adult output, contains a syllable with more than one onset consonant, the child selects the segment that contributes to form the optimal syllable according to the universal margin hierarchy (e.g. [kin] < /klin/ 'clean'; [sIp] < /slIp/ 'slip').

The fact that nasals are the only possible codas in TF is explained by their property of sharing place features. Given that Spanish nasals undergo place assimilation when parsed as codas, they may rely on the place of articulation of a following consonant (e.g. [(míŋ.go)] < [do.(míŋ.go)] 'Domingo'). Despite the ranking SYLL-WELL >> HEAD(PWd)MAX, their property of sharing place features allows nasals to pass undetected by CODA-COND, a member of SYLL-WELL (36b).

(36) SYLL-WELL >> HEAD(PWd)MAX , I-CONTIGUITY

SF:		[li.(sán̺.dro)]	SYLL-WELL	HEAD(PWd)MAX	I-CONTIGUITY
a.		[(čán̺.dro)]	* !		
b.	☞	[(čán̺.do)]		r	*
c.		[(čá.do)]		n ! r	* *
SF:		[do.(míŋ.go)]			
a.		[(mí.ɣo)]			ŋ !
b.	☞	[(míŋ.go)]			

However, place sharing is only possible when the nasal is parsed as the coda of the first syllable of TF. Note that a nasal parsed as the coda of the second syllable of TF, would have to bear its own place feature because, in that position, it would not be followed by another consonant that could support it. This explains why, in Type-B hypocoristics, the second syllable of TF may not be closed by any consonant whatsoever. The same constraint ranking accounts for the loss of all other consonants in the coda.

(37) SYLL-WELL >> HEAD(PWd)MAX, I-CONTIGUITY

SF:		[al.(βér.to)]	SYLL-WELL	HEAD(PWd)MAX	I-CONTIGUITY
a.		[(βér.to)]	* !		
b.	☞	[(βé.to)]		r	*
SF:		[r̄o.(sál.ba)]			
a.		[(čál.βa)]	* !		
b.	☞	[(čá.βa)]		l	*

In sum, the optimal Type-B truncated form must be a candidate that reduces to a MinWd because the Prosodic-Word Restrictor constraints dominate MAX(SF-TF). However, in Type-B hypocoristics, left-ANCHORing is not enforced. It is HEAD-MAXimization that is favored, instead (e.g. [(li.na)] < [paw.(li.na)] 'Paulina'). Because HEAD(PWd)MAX dominates PWR, the segments to be parsed under the MinWd must be the correspondents of the segments contained in the head of the PWd of SF. Nonetheless, given that the markedness constraints SYLL-WELL dominate HEAD (PWd)MAX, the optimal TF may not always have a correspondent for every single segment contained in the main-stressed foot of SF. The effects of the whole ranking are illustrated below.

(37) SYLL-WELL >> HEAD(PWd)MAX >> PWR >> MAX(SF-TF), I-CONTIGUITY

SF:	[ber.(nár.δa)]	SYLL-WELL	HEAD(PWd)MAX	PWR	MAX(SF-TF)	I-CONTIG
a.	[(bér.nar)]	* ! *	δa		* *	
b.	[(bér.na)]	* !	rδa		* *	
c.	[ber.(nár.δa)]	* ! *		*		
d.	[(nár.δa)]	* !			* * *	
e. ☞	[(ná.δa)]		r		* * * *	*

Candidates (37a-d) are ruled out by SYLL-WELL because they all contain the segment [r] parsed as a syllable coda. Since [r] bears its own place feature (e.g.

[coronal]), each one of these candidates falls in violation of the constraint S-CODACOND. The optimal truncated form must drop the correspondent of the segment parsed as the coda of the leftmost syllable of the main-stressed foot of SF (37e). This move enables it to filter out all marked syllable structure while forming a MinWd that provides a correspondent for most of the segments contained within the head of the PWd of SF.

Although there are obvious discrepancies at the segmental level, Type-B hypocoristics achieve the same prosodic unmarkedness as their Type-A counterparts: both types of truncated forms exhibit an unmarked PWd where all syllables are parsed by a foot and this foot is binary and perfectly aligned with both edges of the PWd (e.g. $[(\sigma\sigma)]_{PWd}$). Their segmental discrepancies stem from the fact that whereas in Type-A hypocoristics the kind of faithfulness that is enforced is directed towards the left periphery of SF, in Type-B hypocoristics it is faithfulness to a prosodic head that takes precedence. Plus, whereas in Type-B hypocoristics the skipping of certain segments is tolerated in order to avoid marked syllable structure, in Type-A hypocoristics internal segments may not be skipped under any circumstances.

This analysis shows that in truncatory morphology certain (O-O)-FAITHFULNESS constraints are outranked by markedness constraints. Although truncation operates within a different correspondence dimension, this tendency to rank MARKEDNESS over FAITHFULNESS yields some resemblance to child phonology. From this viewpoint, it is not surprising that the lexicon of Spanish child language is full of words that exhibit the same type of unmarkedness that characterizes truncated forms (38).

(38)	$[(\text{té.te})]_{PWd}$	'baby bottle'	$[(\text{ká.ka})]_{PWd}$	'poop'
	$[(\text{tá.ta})]_{PWd}$	'daddy'	$[(\text{pí.pi})]_{PWd}$	'pee'
	$[(\text{má.ma})]_{PWd}$	'mommy'	$[(\text{kó.ko})]_{PWd}$	'monster'

4.1 Onset optimization

In addition to displaying faithfulness to a prosodic head, another distinguishing property of Type-B hypocoristics is their tendency to substitute certain consonants in SF with consonants of lower sonority (e.g. [č] < [s], [p] < [f], [k] < [x], [l] < [r]). Lipski (1995) claims that these sound substitutions arise from the application of low-level phonetic rules. However, no attempt has been made to formulate such rules or, what is more important, to relate these segmental changes to the general tendency of truncated forms to avoid markedness. I argue that these sound substitutions respond to a drive to optimize syllable onsets, which allows TF syllables to become segmentally less marked. Boyd-Bowman (1955) presents the most extensive corpus of data on Type-B hypocoristics. The following data are representative of the most regular sound substitutions pointed out by this author.

(39) a. s → č

[ar.te.(mí.sa)]$_{PWd}$	→	[(mí.ča)]$_{PWd}$	Artemisa
[al.(fón.so)]$_{PWd}$	→	[(pón.čo)]$_{PWd}$	Alfonso
[se.(sí.lia)]$_{PWd}$	→	[(čí.la)]$_{PWd}$	Cecilia
[(sój.la)]$_{PWd}$	→	[(čó.la)]$_{PWd}$	Zoila

b. f → p

[al.(fón.so)]$_{PWd}$	→	[(pón.čo)]$_{PWd}$	Alfonso
[bo.ni.(fá.sjo)]$_{PWd}$	→	[(pá.čo)]$_{PWd}$	Bonifacio
[del.(fí.na)]$_{PWd}$	→	[(pí.na)]$_{PWd}$	Delfina
[ew.(frá.sja)]$_{PWd}$	→	[(pá.ča)]$_{PWd}$	Eufrasia

c. x → k

[ew.(xé.nja)]$_{PWd}$	→	[(ké.ña)]$_{PWd}$	Eugenia
[(xór.xe)]$_{PWd}$	→	[(kó.ke)]$_{PWd}$	Jorge
[re.(fú.xjo)]$_{PWd}$	→	[(kú.ko)]$_{PWd}$	Refugio
[bir.(xí.njo)]$_{PWd}$	→	[(kí.ño)]$_{PWd}$	Virginio

d. r → l

[aw.(ré.ljo)]$_{PWd}$	→	[(lé.lo)]$_{PWd}$	Aurelio
[aw.(ró.ra)]$_{PWd}$	→	[(ló.la)]$_{PWd}$	Aurora
[el.(βí.ra)]$_{PWd}$	→	[(bí.la)]$_{PWd}$	Elvira
[si.(rí.lo)]$_{PWd}$	→	[(lí.lo)]$_{PWd}$	Cirilo

These examples reveal that the segments /s, f, x, r/ are strongly disfavored. The fricatives /s, f, x/ turn into the stops /č, p, k/ respectively (39a-c), and the vibrant /r/ changes into the lateral /l/ (39d). According to the universal sonority scale, all of these changes represent a decrease in sonority values.

(40) Sonority Scale:

Obstruents				Nasals	Laterals	Vibrants
p, t, k, č	b, d, g	f, s, x	v, y, β, δ, ɤ	m, n, ñ	l	r
1	2	3	4	5	6	7

(41) Sonority Decrease:

s → č			
f → p	Sonority 3	→	Sonority 1
x → k			
r → l	Sonority 7	→	Sonority 6

In order to account for the tendency of /s, f, x, r/ to have less sonorous correspondents in TF, I resort to the Universal Syllable Margin Hierarchy (Prince and Smolensky 1993).

(42) *Syllable-Margin Hierarchy*:

*M/vowels >> *M/vibrants >> *M/laterals >> *M/nasals >> *M/voiced fricatives >> *M/voiceless fricatives >> *M/voiced stops >> *M/voiceless stops

It is important to point out that despite the fact that low sonority segments make better syllable margins, many of the onset segments in SF do not have less sonorous correspondents in TF. When segments other than /s, f, x, r/ are involved, TF tends to provide identical correspondents (e.g. [(lí.na)] < [ka.ta.(lí.na)] 'Catalina'). IDENT is the faithfulness constraint that promotes featural identity between correspondent elements (McCarthy and Prince, 1995).

(43) IDENT(SF-TF): *Featural Identity between SF and TF-correspondents*
Let α be a segment in SF and β be any correspondent of α in TF. If α is [γF], then β is [γF].

IDENT(SF-TF) is not a single constraint but rather a set of constraints that covers all phonological features. For instance, IDENT(sonorant) and IDENT(nasal) are specific versions of IDENT(SF-TF). Given that the substitution of the set of segments /s, f, x/ by the set /č, p, k/ only involves the features [continuant] and [place], it is necessary to segregate IDENT(continuant) and IDENT(place) from the rest of IDENT(SF-TF) constraints. The ranking IDENT(SF-TF) >> *M/α >> IDENT(continuant, place) promotes the optimization of syllable onsets as long as no features other than [continuant] and [place] are affected. Tableau (44) illustrates why [p] is selected as the optimal correspondent of [f]. Candidates (44b-d) optimize the onset of the first syllable by parsing a lower-sonority segment as the correspondent of /f/. Candidate (44d) also optimizes the onset of the second syllable but it is immediately ruled out by IDENT(SF-TF) because in doing so it becomes unfaithful to the features [sonorant] and [nasal]. Note that if IDENT(continuant) and IDENT(place) are the only IDENT(SF-TF) constraints that are dominated, then /s, f, x/ are the only onset segments that may be optimized. Candidate (44b) is also put out of competition by IDENT(SF-TF) because it replaces /f/ with a segment that bears the feature [strident]. Candidate (44c) is the only one that manages to optimize the onset at an affordable cost. By violating lower-ranking *M/p,t,k,č/ and IDENT(cont, pl), it is able to spare a violation of the higher-ranking anti-margin constraint *M/x,f,s/. Similar arguments apply to the selection of /č, k/ as the optimal correspondents of /s, x/, as illustrated by tableaux (45) and (46) below.

Even the puzzling fact that the consonant /s/ turns into the segment /č/ rather than the expected /t/ has a plausible explanation under this analysis. Considering that the change s → č only affects the features [continuant] and partially, the feature [place] (note that [coronal], the main place feature is preserved), candidate (45c) scores better than any other candidate because it remains faithful to all of the undominated features while it still manages to optimize one of its two onsets (cf. 45a). Since Spanish does not have a segment less sonorous than /s/ that preserves the feature [strident] (e.g. /ts/), no other Spanish sound could be a better substitute for /s/. Even though /t/ and /s/ share the same specification for the place feature [anterior], the coronal stop is not chosen as the optimal substitute for /s/ because, in addition to [continuant], it also fails to preserve the feature [strident] (45b).

(44) IDENT(SF-TF) >> *M/α >> IDENT(continuant, place)

SF:	[del.(fí.na)]	IDENT(SF-TF)	*M/m,n,ñ	*M/x,f,s	*M/b,d,g	*M/p,t,k,č	IDENT(cont, place)
a.	[(fí.na)]		*	* !			
b.	[(čí.na)]	[strident] !	*			*	[continuant, place]
c. ☞	[(pí.na)]		*			*	[continuant, place]
d.	[(pí.da)]	[sonorant] ! [nasal]			*	*	[continuant, place]

(45) IDENT(SF-TF) >> *M/α >> IDENT(continuant, place)

SF:	[se.(sí.lja)]	IDENT(SF-TF)	*M/l	*M/x,f,s	*M/b,d,g	*M/p,t,k,č	IDENT(cont, place)
a.	[(sí.la)]		*	* !			
b.	[(tí.la)]	[strident] !	*			*	[continuant, place]
c. ☞	[(čí.la)]		*			*	[continuant, place]
d.	[(čí.da)]	[sonorant] !			*	*	[continuant, place]

(46) IDENT(SF-TF) >> *M/α >> IDENT(continuant, place)

SF:	[(xór.xe)]	IDENT(SF-TF)	*M/x,f,s	*M/b,d,g	*M/p,t,k,č	IDENT(cont, place)
a.	[(xó.xe)]		* ! *			
b. ☞	[(kó.ke)]				* *	[cont] [cont]
c.	[(pó.pe)]				* *	[cont, pl] ! [cont, pl]
d.	[(čó.če)]	[strident] !		*	* *	[cont, pl] [cont, pl]

(47) IDENT(SF-TF) >> *M/α >> IDENT(continuant, place, lateral)

SF:	[aw.(ró.ra)]	IDENT(SF-TF)	*M/r	*M/l	*m/b,d,g	*M/p,t,k,č	IDENT(cont, pl, lat)	
a.	[(ró.ra)]		* ! *					
b. ☞	[(ló.la)]			* *			[cont, lat]	[cont, lat]
c.	[(dó.da)]	[sonorant] !			* *		[cont]	[cont]
d.	[(pó.pa)]	[sonorant] !				* *	[cont, pl, voi]	[cont, pl, voi]

(48) IDENT(SF-TF) >> *M/α >> IDENT(continuant, place, lateral, voice)

SF:	[e.(δwár.δo)]	IDENT(SF-TF)	*M/β,δ,ɤ	*M/b,d,g	*M/p,t,k,č	IDENT(cont, pl, lat, voi)	
a.	[(δá.δo)]		* ! *				
b.	[(dá.do)]			* ! *		[cont]	[cont]
c. ☞	[(tá.to)]				* *	[cont, voi]	[cont, voi]
d.	[(pá.po)]				* *	[cont, pl, voi] !	[cont, pl, voi]

The substitution r → l further requires the segregation of IDENT(lateral) from IDENT(SF-TF). This is illustrated in tableau (47) above. Candidate (47b) manages to optimize both onsets by parsing lateral segments as the correspondents of the two vibrant consonants. This change affects the features [continuant] and [lateral], but since IDENT(cont, pl, lat) is bottom ranking, the four violations of this constraint are justified given that they help spare two violations of higher-ranking *M/r/. Candidates (47c) and (47d) go a step too far in their effort to optimize syllable onsets and end up falling in violation of high-ranking IDENT(SF-TF) because they replace the two [+sonorant] consonants with [-sonorant] ones.

Boyd-Bowman (1955) also observes that in certain dialects there is a tendency to replace voiced stops, particularly when realized as fricatives (e.g. [β, δ, ɤ]), with their voiceless counterparts (e.g. [(tá.to)] < [e.(δwár.δo)] 'Eduardo', [(kó.ka)] < [(ól.ɤa)] 'Olga'). This change also entails a reduction in sonority values that contributes to optimize syllable onsets.

(49) Sonority Decrease:

β	→	p	
δ	→	t	Sonority 4 → Sonority 1
ɤ	→	k	

Since it has already been established that IDENT(continuant) is dominated by the anti-margin constraints, this additional pattern can be accommodated into the analysis simply by segregating the feature [voice] and adding it to the set of dominated features. In tableau (48) above, the featurally identical candidate is the first one to be discarded because it violates one of the highest anti-margin constraints (e.g. *M/β,δ,ɤ/). Although candidate (48b) is an improvement, candidate (48c) provides the very optimal onsets while still being faithful to the undominated features. Candidate (48d) is a strong contender because it also complies with the top-ranking constraints but it incurs unnecessary violations of the bottom-ranking constraint IDENT(cont, p1, lat, voi).

The resemblance between truncation and child language also extends to the phenomenon of consonant harmony (CH), whereby non-adjacent consonants assimilate to one another, usually in place features (e.g. [bɔml] < /tɔml/ 'Tommy'). In a recent study of CH in child language, Goad (1995) concludes that 'CH is motivated by the need to satisfy the alignment of consonant features within the domain of the prosodic word' (p. 19). Her account of CH relies on the constraint ALIGN(Articulation), which by dominating IDENT, is able to force melody copy. Although quite common in child phonology, CH is rare in adult language (sibilant assimilation being the only attested type of long-distance assimilation among consonants). In Type-B hypocoristics, however, there is a subset of forms for which the onset of the first syllable of TF is an identical copy of the onset of the second syllable (e.g. [(ná.na)] < [su.(sá.na)] 'Susana'). Given that the two consonants harmonize in all of their features, I interpret this as a case of total CH. The following examples presented in Lipski (1995:392) show that CH operates leftwards.

(50)	[si.(rí.lo)]$_{PWd}$	→	[(lí.lo)]$_{PWd}$	Cirilo
	[fe.(lí.pe)]$_{PWd}$	→	[(pí.pe)]$_{PWd}$	Felipe
	[fe.δe.(rí.ko)]$_{PWd}$	→	[(kí.ko)]$_{PWd}$	Federico
	[gi.(yér.mo)]$_{PWd}$	→	[(mé.mo)]$_{PWd}$	Guillermo
	[xo.(sé.fa)]$_{PWd}$	→	[(pé.pa)]$_{PWd}$	Josefa
	[(xús.to)]$_{PWd}$	→	[(tú.to)]$_{PWd}$	Justo
	[mar.ɤa.(rí.ta)]$_{PWd}$	→	[(tí.ta)]$_{PWd}$	Margarita
	[(már.ta)]$_{PWd}$	→	[(tá.ta)]$_{PWd}$	Marta
	[r̄e.(fú.xjo)]$_{PWd}$	→	[(kú.ko)]$_{PWd}$	Refugio

Note that onset optimization is not enough to account for these data because the affected consonants (e.g. /f, s, x, 1, δ/), could simply have less sonorous correspondents in TF (e.g. /p, č, k, l, t/) in order to provide better onsets. For instance, the source form [fe.δe.(rí.ko)] could simply turn into [(li.ko)]. Here, however, there is more than just onset optimization because the onset consonant of the first syllable of TF gives up all of its features in order to match the other onset segment within the MinWd.

Boyd-Bowman (1955) reports that among the subset of Type-B truncated forms that exhibit CH only eight of the Spanish consonants may be found. These are the voiceless stops /p, t, k/, the nasals /m, n/, the palatal sounds /č, y/[9] and the lateral /l/, which correspond to the first eight sounds learned by the child in the process of acquiring Spanish (p. 358). These segments are all expected under the ranking IDENT(SF-TF) >> *M/α >> IDENT(continuant, place, lateral, voice) that was established above. But it must be highlighted that the presence of these segments in TF originates from three different sources. Some of these consonants appear in TF as featurally-identical correspondents of SF-segments (e.g. [(tá.ta)] < [(már.ta)] 'Marta'), others arise as featurally-unfaithful correspondents that are chosen because of their lower sonority (e.g. [(kú.ko)] < [r̄e.(fú.xjo)] 'Refugio'), and yet others appear in TF as harmonizing consonants such as the first /t/ of [(tá.ta)] and the first /k/ of [(kú.ko)]. The group of voiceless stops is expected because of their low sonority. Nasals are also expected to appear in TF, but not because of their sonority value, but because IDENT(nasal) is one of the undominated features subsumed under high-ranking IDENT(SF-TF). It should be noted that although there are only a few examples, the group of nasals also includes the palatal nasal /ñ/ (e.g. [(tó.ño)] < [an.(tó.njo)] 'Antonio'; [(ñé.ño)] < [kar.(δé.njo)]

(52) ALIGN(C) >> IDENT(SF-TF) >> *M/α >> IDENT(cont, pl, lat, voi)

SF:		[ře.(fú.xjo)]	ALIGN(C)	IDENT(SF-TF)	*M/x,f,s	*M/p,t,k,č	IDENT(cont, pl, lat, voi)
a.		[(fú.xo]	[place] !		* *		
b.		[(pú.ko)]	[place] !			* *	[continuant, place] [continuant, place]
c.	☞	[(kú.ko)]				* *	[continuant, place] [continuant]

(53) ALIGN(C) >> IDENT(SF-TF) >> *M/α >> IDENT(cont, pl, lat, voi)

SF:		[su.(sá.na)]	ALIGN(C)	IDENT(SF-TF)	*M/m,n	*M/x,f,s	*M/p,t,k,č	IDENT(cont, pl, lat, voi)
a.		[(sá.na]	[nasal] !		*	*		
b.		[(čá.na)]	[nasal] !		*		*	
c.	☞	[(ná.na)]		[strident, nasal]	* *			[continuant]

(54) ALIGN(C) >> IDENT(SF-TF) >> *M/α >> IDENT(continuant, place)

SF:		[fe.δe.(rí.ko)]	ALIGN(C)	IDENT(SF-TF)	*M/r	*M/l	*M/p,t,k,č	IDENT(cont, pl, lat, voi)
a.		[(rí.ko)]	[-sonor] ! [pl]		*		*	
b.		[(lí.ko)]	[-sonor] ! [pl]			*	*	[continuant, lateral]
c.	☞	[(kí.ko)]		[sonorant]			* *	[continuant]

4.2 Multiple correspondents

In addition to the sound substitutions discussed above, in the formation of Type-B hypocoristics, there is also a process of palatalization that affects [+anterior] coronal consonants (e.g. /s, r, l, d, t, n/) when preceding the front glide /j/. The following examples are representative.

(55) a. sj → č

$[a.ta.(ná.sjo)]_{PWd}$	→	$[(ná.čo)]_{PWd}$	Atanasio
$[gra.(sjé.la)]_{PWd}$	→	$[(čé.la)]_{PWd}$	Graciela
$[kle.(mén.sja)]_{PWd}$	→	$[(mén.ča)]_{PWd}$	Clemencia

b. rj → y

$[be.li.(sá.rjo)]_{PWd}$	→	$[(čá.yo)]_{PWd}$	Belisario
$[bik.(tó.rja)]_{PWd}$	→	$[(tó.ya)]_{PWd}$	Victoria
$[(gló.rja)]_{PWd}$	→	$[(gó.ya)]_{PWd}$	Gloria

c. lj → y

$[a.(má.lja)]_{PWd}$	→	$[(má.ya)]_{PWd}$	Amalia
$[e.(mí.ljo)]_{PWd}$	→	$[(mí.yo)]_{PWd}$	Emilio
$[r̄o.(xé.ljo)]_{PWd}$	→	$[(xé.yo)]_{PWd}$	Rogelio

d. dj → y

$[kus.(tó.δja)]_{PWd}$	→	$[(tó.ya)]_{PWd}$	Custodia
$[(djé.ɤo)]_{PWd}$	→	$[(y̌é.yo)]_{PWd}$	Diego
$[le.o.(ká.δja)]_{PWd}$	→	$[(ká.ya)]_{PWd}$	Leocadia

c. tj → č

$[san.(tjá.ɤo)]_{PWd}$	→	$[(čá.ɤo)]_{PWd}$	Santiago
$[se.βas.(tján)]_{PWd}$	→	$[(čá.no)]_{PWd}$	Sebastián
$[se.βas.(tjá.na)_{PWd}$	→	$[(čá.na)]_{PWd}$	Sebastiana

d. nj → ñ

$[an.(tó.njo)]_{PWd}$	→	$[(tó.ño)]_{PWd}$	Antonio
$[ew.(xé.njo)]_{PWd}$	→	$[(ké.ño)]_{PWd}$	Eugenio
$[bir.(xí.njo)]_{PWd}$	→	$[(kí.ño)]_{PWd}$	Virginio

Note from the data above that the segment /j/ is part of a diphthong that must be simplified in TF in order to abide by *COMPLEX, a member of SYLL-WELL.[10] Considering that the feature [-anterior] of the high vocoid is preserved by the TF-correspondent of the consonant that precedes it (e.g. /č/, /y/, /ñ/), I interpret this process as a case of fusion.

(56) Many-to-one Correspondence:

Source Form	[a n . (t ó . n j o)]
	| | \/ |
Truncated Form	[(t ó . ñ o)]

From this standpoint, a sequence of two segments in SF (e.g. /sj/, /rj/, /lj/, /dj/, /tj/, /nj/) may share a single segment in TF (e.g. /č/, /y/, /ñ/) as their correspondent. In other words, a many-to-one correspondence relationship between SF and TF segments is possible. This type of relationship is sanctioned by UNIFORMITY.

(57) UNIFORMITY: 'No Coalescence" (McCarthy and Prince, 1995)

No element in S_2 has multiple correspondents in S_1.
For $x, y \in S_1$ and $z \in S_1$, if $x \mathfrak{R} z$ and $y \mathfrak{R} z$, then $x = y$.

Note that by violating UNIFORMITY, the optimal TF manages to save the correspondent of a segment that, despite being parsed by the main-stressed foot of SF, is destined to disappear because of running afoul of top-ranking SYLL-WELL. According to this, UNIFORMITY must be outranked by HEAD(PWd)MAX so that, through sharing the correspondent of the preceding consonant (58c), the front glide may have a correspondent in TF without posing a challenge to SYLL-WELL.

(58) SYLL-WELL >> HEAD(PWd)MAX >> UNIFORMITY

SF:	[an.(tó.njo)]	SYLL-WELL	HEAD(PWd)MAX	UNIFORMITY
a.	[(tó.njo)]	* !		
b.	[(tó.no)]		j !	
c. ☞	[(tó.ñ̲o)]			ñ

Nevertheless, if a single segment in TF is allowed to act as the correspondent of multiple segments in SF, one would expect that other segments parsed by the main-stressed foot of SF that run afoul of SYLL-WELL would also be able to secure a correspondent in TF through this strategy. However, the only UNIFORMITY violations that are tolerated are those required to spare the front glide. I interpret this fact as an effect of a parsing constraint that requires the preservation of this segment.

(59) PARSE-/j/: Parse the segment /j/

Even though PARSE-/j/ is dominated by SYLL-WELL, the front glide may still have a correspondent in TF because PARSE-/j/ outranks UNIFORMITY.

(60) SYLL-WELL >> PARSE-/j/ >> UNIFORMITY

SF:	[san.(tjá.ɤo)]	SYLL-WELL	PARSE-/j/	UNIFORMITY
a.	[(tjá.ɤo)]	* !		
b.	[(tá.ɤo)]		* !	
c. ☞	[(č̲a.ɤo)]			č

Candidate (60a) is ruled by SYLL-WELL because it runs afoul of *COMPLEX. Candidates (60b) and (60c) illustrate two ways to comply with *COMPLEX. Whereas (60b) opts for dropping the offending segment, (60c) finds a harmonic solution that reconciles the two antagonistic constraints. By fusing the segments /t/ and /j/, (60c) is able to provide a correspondent for /j/, as required by PARSE-/j/, and simplify the diphthong, as demanded by SYLL-WELL.[11] The same arguments apply to the cases of fusion involving the sequences /sj/, /rj/, /lj/ and /dj/ as illustrated in tableau (61) below

(61) SYLL-WELL >> PARSE-/j/ >> UNIFORMITY

SF:	[a.ta.(ná.sjo)]	SYLL-WELL	PARSE-/j/	UNIFORMITY
a.	[(ná.sjo)]	* !		
b.	[(ná.so)]		* !	
c. ☞	[(ná.č̲o)]			č
SF:	[bik.(tó.rja)]			
a.	[(tó.rja)]	* !		
b.	[(tó.ra)]		* !	
c. ☞	[(tó.y̲a)]			y
SF:	[a.(má.lja)]			
a.	[(má.lja)]	* !		
b.	[(má.la)]		* !	
c. ☞	[(má.ya)]			y
SF:	[kus.(tó.δja)]			
a.	[(tó.δja)]	* !		
b.	[(tó.δa)]		* !	
c. ☞	[(tó.y̲a)]			y

Note that if these changes did not result from fusion, there would be no reason whatsoever for the segments /r, l, n, d, t, s/ to become palatalized. Such changes take place only because the features of /j/ fuse with the features of the preceding consonant.

4.3 Problematic cases

There remains a group of sound substitutions that may not be embraced by the analysis developed above because they do not obey the tendency to optimize syllable onsets nor do they involve multiple correspondents.

(62)	a.	s → l			
		[a.δe.(láj.δa)]$_{PWd}$	→	[(lá.la)]$_{PWd}$	Adelaida
		[e.(δwár.δo)]$_{PWd}$	→	[(lá.lo)]$_{PWd}$	Eduardo
	b.	r → y			
		[e.δel.(mí.ra)]$_{PWd}$	→	[(mí.ya)]$_{PWd}$	Edelmira
		[(fló.ra)]$_{PWd}$	→	[(pó.ya)]$_{PWd}$	Flora
	c.	d → y			
		[al.(fré.δo)]$_{PWd}$	→	[(pé.yo)]$_{PWd}$	Alfredo
		[e.(δwár.δo)]$_{PWd}$	→	[(ǰá.yo)]$_{PWd}$	Eduardo

Contrary to optimizing the onset, the substitution that replaces /δ/ by /l/ increases the sonority of this segment making it a less harmonic onset. In the case of r → y, there is a decrease in sonority, but features other than [continuant], [place] [lateral] and [voice] are being affected (e.g. [approximant], [strident]). The change δ → y is also puzzling because it does not contribute to optimize the onset and there is no apparent reason for this palatalization.

Finally, the phonological process whereby a [+anterior] coronal consonant fuses with a following front glide does not apply consistently. There are examples where instead of palatalization, the option is to delete the glide.

(63)	[baw.(δí.ljo)]$_{PWd}$	→	[(lí.lo)]$_{PWd}$	Baudilio
	[(bráw.ljo)]$_{PWd}$	→	[(lá.lo)]$_{PWd}$	Braulio
	[se.(sí.lja)]$_{PWd}$	→	[(čí.la)]$_{PWd}$	Cecilia
	[aw.(ré.ljo)]$_{PWd}$	→	[(lé.lo)]$_{PWd}$	Aurelio

This less frequent solution would suggest unspecified ranking between the constraints PARSE-/j/ and UNIFORMITY. When the latter takes precedence over the former, fusion is not a viable option and the diphthong must be simplified through deletion, instead (54c).

(54) SYLL-WELL, UNIFORMITY >> PARSE-/j/

SF:	[se.(sí.lja)]	SYLL-WELL	UNIFORMITY	PARSE-/j/
a.	[(čí.lja)]	* !		
b.	[(čí.ya)]		y !	
c. ☞	[(čí.la)]			*

Considering the magnitude of the Spanish speaking world, this degree of variation is not surprising. Although Latin American dialects share many tendencies, which distinguish them from Peninsular dialects, there are still properties in which they differ from one another. Despite these irregularities, the analysis proposed here does explain most of the sound substitutions reported by Boyd-Bowman (1955). This Emergence-of-the-Unmarked approach has the advantage of relating the changes that take place at the segmental level to those that operate at the prosodic level since they both manifest the strong drive of truncated forms to reduce markedness. From the optic that Type-A and Type-B hypocoristics represent two different degrees of Emergence of the Unmarked, it is not surprising that the output of one of these processes is more faithful to the source form, whereas the output of the other one is structurally more simple but less faithful. Furthermore, since truncation is explained through the use of universal constraints this analysis results in greater generality, which allows a connection between truncation and child language. The resemblance between truncation and child language is not coincidental but expected given that they both tend to invigorate markedness constraints in order to yield unmarked outputs.

5. Summary

In this paper, I have studied the two main truncation processes that occur in Spanish. I argued that Type-A and Type-B hypocoristics represent two different degrees of Emergence of the Unmarked resulting from the general ranking (I-O)-FAITHFULNESS >> MARKEDNESS >> (O-O)-FAITHFULNESS, which yields some resemblance between truncation and child language since they both attribute a high-ranking status to MARKEDNESS. Both truncation processes share the property of ranking the Prosodic-Word Restrictor constraints above MAX(SF-TF). This yields the reduction of the Source Form (SF) to the shape of the unmarked PWd (e.g. a MinWd). Consequently, whenever SF is longer than a MinWd, the Truncated Form (TF) may not provide a correspondent for every element in SF. Nonetheless, TF maintains a certain degree of identity with respect to SF because not all correspondence constraints are dominated. In Type-A hypocoristics faithfulness to the initial part of SF is enforced by the constraints ANCHOR(SF-TF)L and I-CONTIGUITY, whereas in Type-B hypocoristics faithfulness to the head of the PWd is secured by HEAD(PWd)MAX. In Type-A hypocoristics, I-CONTIGUITY is able to prevent the deletion of internal segments by ranking above the markedness constraints (e.g. *COMPLEX, CODA-COND). In Type-B hypocoristics, on the other hand, I-CONTIGUITY is outranked by the markedness constraints, which allows TF to filter out more marked structure. Although Type-B truncated forms obey a strong drive to preserve the segments parsed by the head of the PWd, some of these segments (e.g. [s], [f], [x], [r], [β], [δ], [ɤ]) have non-identical correspondents (e.g. [č], [p], [k], [l], [p], [t], [k]) or simply have no correspondents at all. This is the result of a tendency to optimize syllables in the number and quality of segments. By dominating the faithfulness constraint HEAD(PWd)MAX, the set of markedness constraints keeps TF from providing correspondents for certain segments in the main-stressed foot of SF. Furthermore, given that the anti-margin constraints *M/α dominate a set of IDENT(SF-TF) constraints, a certain degree of featural unfaithfulness is tolerated as long as the mismatch between SF and TF correspondents does not affect features other than [continuant], [place] [lateral] and [voice]. Consonant harmony is also used to optimize onsets and reduce the number of feature specifications within the domain of the PWd. Another source of sound substitutions is the sequence of a coronal consonant and a front glide, which are preserved in TF as a single palatal segment that plays a double role as the correspondent of the two segments in question. This two-to-one correspondence relationship is used to reconcile the demands of a syllable well-formedness constraint that requires the simplification of complex nuclei and a parsing constraint that enforces the preservation of the offending segment.

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Notes

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1 Although they have also been attested in some Latin American dialects (e.g. Puerto Rican Spanish), Type-A hypocoristics are more commonly found among Peninsular dialects, where the overwhelming tendency is to create the hypocoristic by preserving the initial part of the source form. The examples of Type-A hypocoristics I provide here come from Prieto (1992).

2 Type-B hypocoristics are more commonly found among Latin American dialects but traces of this process can also be found in Peninsular dialects (e.g. [(ló.les)] < [do.(ló.res)] 'Dolores', attested in Valencia). Except for a few dialects, the overwhelming tendency among Latin American Spanish is to favor the preservation of the segments contained in the main-stressed foot of SF (e.g. [(tí.na)] < [kris.(tí.na)] 'Cristina'. The examples of Type-B hypocoristics I provide here come from Boyd-Bowman (1955).

3 Evidence that truncatory morphology operates on an (Output-Output)-Correspondence dimension is provided by the fact that TF depends on derived properties of SF such as syllable and foot structures. Since this type of structure is predictable in Spanish, it may not be encoded in the lexicon. Rather, it is projected by the function GEN. According to this, SF may not be an abstract input form but a derived output form that contains the prosodic structure necessary to generate TF.

4 There are actually two versions of ALL-FT. ALL-FT-R requires every foot to be word final, whereas ALL-FT-L demands that every foot be word initial. Given that Spanish feet tend be as close to the right edge of the word as possible (e.g. [al.(βér.to)] 'Alberto'), I assume that ALL-FT-R is the version of ALL-FT that is active in Spanish.

5 This particular version of CODA-COND also has use in Spanish in accounting for the fact that [r, l, n, s] are the only consonants allowed word-finally in penultimately-stressed forms, which are the unmarked pattern. A more common version of CODA-COND used in the literature bars all non-coronal consonants (Prince and Smolensky 1993), but such constraint could not explain why [da.(βíδ)] becomes [(dá.βi)] and not *[(dá.βiδ)] since nothing could prevent [δ] from being preserved. It seems that in Spanish, [s] is attributed higher sonority, which allows it to pattern like the sonorants (unlike English, [s] may not

combine with another consonant to create an onset cluster and all cases of complex codas in Spanish have [s] as the second member of the cluster). By contrast, the sonority of the coronals [δ] and [t] seems to be too low to make them acceptable codas.

6 A ranking between MAX(SF-TF) and CODA-COND may not be established in this case because higher-ranking NO-CODA precludes any effect by CODA-COND.

7 Note that a candidate like *[(rán.θis)], which opts for deleting the leftmost segment of SF in order to simplify the onset cluster without posing a challenge to I-CONTIGUITY is ruled out by the undominated constraint ANCHOR(SF-TF)L.

8 However, some Central American dialects (e.g. Southern Mexico and Guatemala), allow coronal consonants in the coda (e.g. [(tíš)] < [be.a.(trís)] 'Beatriz'). As a consequence of this, in such dialects, TF may be a MinWd built on a single heavy syllable. For an account of those dialects, see Piñeros (1999).

9 I use /y/ to represent a palatal fricative consonant that is realized as the affricate [y̌] after pause, [l] and [n] or as [y] elsewhere.

10 As it was shown above, complex nuclei must be simplified through the deletion of the less sonorous vocoid of the diphthong since this entails the violation of a lower-ranking anti-peak constraint.

11 Note that a candidate like [(tí.go)], which provides a correspondent for /j/ at the expense of sacrificing the non-high vowel is ruled out by *P/α.