Conflicting Quantity Patterns in Valencian Catalan Prosody*

Antonio Grau Sempere   *University of Evansville*

1. Introduction

Traditionally, it has been held that that the sound systems of languages are consistent regarding sensitivity to syllable weight (among others, see Hayes' *Metrical Stress Theory*). That is, in quantity sensitive languages the content of syllables is an important factor in their phonology; by contrast, in quantity insensitive languages, the content of syllables is not relevant. Furthermore, Hayes treats quantity sensitivity as a parameter, which means languages are either sensitive or insensitive to quantity, but they cannot be both at the same time. This paper shows that this all-or-nothing conception of weight (in)sensitivity is too rigid and does not account for languages, such as Valencian Catalan, that do manifest contradicting quantity patterns in their phonology.[1]

Section 2 of this study analyzes the role of syllable weight in stress assignment and truncation, a process of prosodic morphology (McCarthy and Prince 1986, 1990, 1991, 1995), in Catalan and claims that one of its major regional varieties, Valencian Catalan, shows a conflicting weight pattern, that is a quantity

sensitive (QS) non-verbal main-stress system and a quantity insensitive (QI) prosodic morphology, mainly involving stress and truncation. On the other hand, the rest of Catalan dialects are consistent in the use of weight in their main non-verbal stress assignment and prosodic morphology.[2]

This study also argues in section 3 that a constraint-based model (Optimality Theory, henceforth OT, Prince and Smolensky) is able to accommodate contradictory weight patterns such as the ones found in Catalan. Finally, section 4 offers a summary of this paper.

2. Inconsistent weight patterns

Along with many other linguists (Cabré 1993, 1994, 1998; Serra 1996, 1997; Bonet and Lloret; Grau Sempere 2002; Oliva and Serra, but also see Alsina, Oliva or Serra 1992-3 for a different perspective), this article supports the view that in Catalan, heavy syllables (CVC or CVG) regularly attract main stress to the final syllable in non-verbs.[3-4]

(1)   Final stress, words ending in a consonant or a glide

        a.   pin.zéj   'brush'
        b.   ko.ro.nél   'colonel'
        c.   tro.féw   'trophee'
        d.   be.ri.tát   'truth'
        e.   a.rós   'rice'

If no heavy syllables are available in word-final position, the main stress falls on the penultimate syllable.

(2)   Penultimate stress, words ending in a vowel

        a.   ká.za   'house'
        b.   e.nór.me   'huge'
        c.   bi.gó.ti   'moustache'
        d.   ká.ro   'car'
        e.   trí.bu   'tribe'

The representation I assume for foot structure in regular stressed non-verbal forms in Catalan is based on Hayes's moraic trochee model.

(3)   Catalan regular non-verbal main foot formation

      a.   Final heavy syllables form a monosyllabic bimoraic foot, i.e., a $(ró^\mu s^\mu)_{Ft}$ 'rice.'

      b.   Final light syllables form a disyllabic trochaic foot with the preceding syllable, i.e., re $(sí^\mu.du^\mu)_{Ft}$ 'residue.'

      c.   According to the previous conclusions, the possible regular feet in Catalan are (σ́L) and (H́), where σ́ stands for any stressed syllable, regardless of weight, L for a light syllable and H for a heavy syllable.

      d.   The minimal word in Catalan languages is bimoraic, coinciding with the size of the minimal foot, e.g., Catalan $[(fú^\mu m^\mu)_{Ft}]_{PrWd}$ 'smoke.'

Hypocoristic formation, a common productive truncation process, has different requirements in the different dialects of Catalan. One of the strongest generalizations made on Valencian hypocoristics, as opposed to Eastern Catalan, is that they must be exactly two syllables long. In all Catalan dialects, truncated nicknames copy the main stress foot of their base, disyllabic in the case of paroxitone (antepenultimate stress) bases and monosyllabic in the case of oxitone (final stress) bases. However, only Valencian Catalan adds a final epenthetic vowel to the oxitone-based (necessarily a single heavy syllable) truncated form, thus increasing the number of syllables to two.

(4)   Hypocoristic formation, paroxiton base

		Valencian Catalan nickname	Eastern Catalan nickname
a.	er.nes.tí.na	tí.na	tí.na
b.	en.ri.ké.ta	ké.ta	ké.ta
c.	ma.no.lí.ta	lí.ta	lí.ta
d.	te.o.dó.ra	dó.ra	dó.ra

(5)   Hypocoristic formation, oxiton base

		Valencian Catalan nickname	Eastern Catalan nickname
a.	dZo.a.kím	tΣí.mo	kím
b.	i.sa.bél	bé.la	bél
c.	bi.sén	sén.to[5]	sén
d.	bal.ta.sár	sá.ro	sár

Cabré (1993, 1994, 1998, 2003) and Cabré and Kenstowicz argue that Eastern Catalan QS minimal word/foot requirements also apply to truncation. The minimal word in Catalan is bimoraic: ów 'egg', áj 'garlic', árk 'arch', préw 'price' (among others, Cabré 1993, 1998, 2003). Some monomoraic content words surface, e.g., pá 'bread', má 'hand', dú 'hard.' However, the vast majority of monomoraic words have an underlying nasal –n or vibrant –r that is erased in word-final position. For instance, consider the alternation between the singular and the plural form pá ~ páns, má ~ máns, dú ~ dúrs.

However, Valencian Catalan behaves differently from Eastern Catalan regarding truncatory patterns and weight considerations. As stated above, while Eastern Catalan allows disyllabic and monosyllabic truncated forms, the size of a truncated word in Valencian Catalan is always limited to two syllables; no monosyllabic or trisyllabic truncated words are present (Casanova; Cabré 1998, 2003). Valencian Catalan adds an epenthetic vowel (gender marker -a, -o) to truncated forms with a source word ending in a consonant, creating a truncated form containing a syllabic trochee. Accordingly, truncation in Valencian is incompatible with a monosyllabic foot, even if it is present in the source; and, consequently, a truncated form has to be exactly a disyllabic foot. This analysis leads to the conclusion that Valencian Catalan truncation does not consider moras but syllables, adhering to a disyllabic, and not the expected bimoraic, minimal word requirement. Stress in truncated words coincides with the one in the base form.

The main objective of this chapter was to account for the discrepancy in the use of syllable weight in Catalan. A unified Optimality Theoretic account of the opposing treatments of syllable weight is the focus of the next section. One of the

main challenging aspects will be to analyze different contrasting surface behaviors with a single ranking of the same OT constraints.

3. OT analysis

To begin our analysis, even though this study supported the view that Catalan stress assignment is QS in non-verbs, we hypothesize that some of the constraints responsible for quantity insensitivity outrank some of the quantity sensitivity constraints. This assumption produces an initial ranking like the following.

(6)   FootMinσ » FootMaxμ[6]

      a.   FootMinσ: feet are minimally disyllabic. (One * per monosyllabic feet).
      b.   FootMaxμ: feet are maximally bimoraic. (One * for every mora in excess of two in a foot).

This study claims that this QI » QS ranking in (6) holds for both stress assignment and truncatory morphology in Ibero-Romance. In other words, a single basic constraint ranking that seems to favor QI behavior, with the addition of other rankings, forces both QS and QI patterns to emerge. This apparent paradox will be resolved hereafter.

Disyllabic feet, originating in words with a final light syllable, such as the example in tableau (7), Catalan *festa* 'party,' naturally result from the ranking in (6), since highly ranked FootMinσ rejects monosyllabic feet.

(7)   Input: festa

	FootMinσ	FootMaxμ
☞ a. (fés.ta)		*
b. (fés) ta	*!	

An issue raised by the ranking in (6) (FootMinσ » FootMaxμ) is the emergence of monosyllabic final feet in forms ending in a heavy syllable when the ranking requires feet to be disyllabic. One initial way to solve this apparent problem is to formulate

the analysis that Catalan feet are trochaic, but not necessarily disyllabic. The ranking responsible for this pattern is   Trochee » Iamb, FootMinσ .

(8)   Trochee » Iamb, FootMinσ

a.   Trochee (a. k. a. RhType = T, Kager 172): feet have initial prominence. (One * for every iambic foot).
b.   Iamb (a. k. a. RhType = I, Kager 172): feet have final prominence. (One * for each trochaic foot).

This ranking disallows iambic feet but allows monosyllabic feet, as shown in the following tableau with Catalan example *porter* 'goalkeeper.'

(9) | Input: porter | Trochee | Iamb | FootMinσ |
|---|---|---|---|
| ☞ a. por (tér) | | * | * |
| b. (por.tér) | *! | | |

The previous analysis does not ban a candidate such as *(pór.ter), with a heavy syllable in the weak position of a foot. To get rid of ungrammatical candidates with a stressed H́ syllable followed by an unstressed H syllable, the constraint WSP-Ft, which specifically penalizes heavy unstressed syllables within a foot, is relevant. WSP-Ft dominating FootMinσ ensure the emergence of the optimal candidate in the previous tableau. The use of this ranking in the subsequent tableau exemplifies the hypothesis that trochaic feet with a heavy unstressed syllable, such as (σ́H), are disallowed and establishes the preference for monosyllabic bimoraic final feet (H́) in Ibero-Romance.

(10)   WSP-Ft » FootMinσ

WSP-Ft (Kager 184): heavy syllables within the foot are prominent. (One * per unstressed footed heavy syllable).

(11)

Input: porter	WSP-Ft	FootMinσ
☞ a. por (tér)		*
b. (pór.ter)	*!	

According to the previous ranking, no H syllables are allowed in the unstressed position of a foot in Ibero-Romance.

A candidate such as *(pór)ter that obeys highly ranked Trochee, WSP-Ft and FootMinσ is banned because of the preference for Ibero-Romance, among many other languages, to place the main stress at the right edge of the prosodic word. This generality can be formalized with a pair of alignment constraints, the ranking of which, in 0, favors the concurrence of the right edges of categories main foot and prosodic word.

(12)   RightMost » LeftMost, FootMinσ

a.   RightMost (Align [Hd-Ft, Right, PrWd, Right], Kager 167): the head foot is rightmost in PrWd. (One * for every segment between the right edge of PrWd and the right edge of the main foot).

b.   LeftMost (Align [Hd-Ft, Left, PrWd, Left], Kager 167): the head foot is leftmost in PrWd. (One * for every segment between the left edge of PrWd and the left edge of the main foot).

The previous ranking forces the main foot to be right aligned with the prosodic word, as in the next tableau, rejecting *(pór) ter.

(13)

Input: porter	RightMost	LeftMost	FootMinσ
☞ a. por (tér)		por	*
b. (pór) ter	t!er		

So far, we have explored a way to solve the apparent puzzle we mentioned before: an initial constraint ranking that would favor QI behavior can explain, with the help of other constraints that promote quantity sensitivity, the emergence of a QS phenomenon. We started assuming a QS » QI, FootMinσ » FootMaxµ, initial ranking that explained the emergence of disyllabic feet in candidates with a final L syllable. The addition of some constraints, Trochee and WSP-Ft, and their outranking of FootMinσ then justified the emergence of monosyllabic feet in cases when a final H syllable is present in the input. Additionally, all feet in Ibero-Romance are right aligned with the right edge of a word due to the effects of highly ranked RightMost dominating its left counterpart and FootMinσ.

The initial QI » QS ranking presented above in (6), FootMinσ » FootMaxµ, gives a partial explanation for the disyllabic shape in Type L pattern of nicknames present in all the dialects under examination, exemplified in the following tableau with the example *Queta < Enriqueta*:

(14)

Base: (èn.ri) (ké.ta)	FootMinσ	FootMaxµ
☞ a. ké.ta		*
b. két	*!	

The ranking of All Feet Left (AFL) and All Feet Right (AFR) over Max BT Seg determines the preference for hypocoristics to form only one foot. The winning truncated candidate necessarily violates Max BT Seg.

(15)   AFR, AFL » Max BT Seg

a.   AFR (Align [Foot, Right, PrWd, Right], Kager 163): every foot stands at the right edge of the PrWd. (One * per segment between the right edge of a foot and the right edge of the PrWd).

b.   AFL (Align [Foot, Left, PrWd, Left], Kager 163): every foot stands at the left edge of the PrWd. (One * per segment between the left edge of a foot and the left edge of the PrWd).

c. Max BT Seg (Benua 16): every segment in the base has a correspondent in the truncated form. (One * per deleted element).

(16)

Base: (èn.ri) (ké.ta)	AFR	AFL	Max BT Seg
☞ a. (ké.ta)			en ri
b. en.ri (ké.ta)		en! ri	
c. (èn.ri) (ké.ta)	ke! ta	en! ri	

The previous ranking partially establishes the preference for Catalan truncated forms to form a single foot, eliminating unparsed syllables or secondary feet, at the cost of minimally violating BT Maximality. Furthermore, Max BT Seg is ranked below FootMaxμ to prevent the surfacing of a candidate that forms a long foot, as in the next tableau.

(17)

Base: (èn.ri) (ké.ta)	FootMaxμ	Max BT Seg
☞ a. (ké.ta)		en ri
b. (én.ri.ke.ta)	*!**	
c. (rí.ke.ta)	*!	en

Catalan hypocoristics discard the segmental material to the left of the main foot of the base. This generality is partially captured by highly ranked HeadMatch, which preserves the head of the main foot from the base in the truncated form, over Max BT Seg, as in tableau (19).

(18) HeadMatch » Max BT Seg

HeadMatch (McCarthy 2000: 183): if α is in H' (PrWd) and α $\Re$ β, then β is in H' (PrWd). (One * for every segment between the head of PrWd in he base and the head of PrWd in the truncated form).

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HeadMatch ensures the head of the base form is the same in the truncated form, as in the next tableau.[7]

(19)

Base: (èn.ri) (ké.ta)	HeadMatch	Max BT Seg
☞ a. (ké.ta)		en ri
b. (rí.ke)	k!e	en
c. (én.ri)	n!rike	ke

Nicknames ending in a heavy stressed syllable only keep the stressed monosyllabic foot from the base form, thus violating FootMinσ, e.g., Eastern Catalan kél < mi.kél. A possible candidate mí.kel, which respects foot binarity without having to epenthesize any segments, is banned by HeadMatch.

(20)

Base: mi (kél)	HeadMatch	FootMinσ
☞ a. kél		*
b. mí.kel	*!	

In addition to this ranking, a more familiar Trochee » Iamb, seen earlier in this section, prevents disyllabic iambic hypocoristics from appearing, e.g., *mi.kél. Given the results of the previous rankings, no segments to the left of the stressed syllable in the base are maintained in Catalan truncated forms.

   Nicknames ending in a heavy stressed syllable do not keep only the rightmost foot in Valencian Catalan, as seen in the next tableau. Instead, some segmental material is epenthesized to comply with foot syllable minimalism.

(21)

Base: bi (sén)	FootMinσ	FootMaxμ
☞ a. (sén.to)		*
b. (sén)	*!	

Taking the previous into account, the next ranking is necessary to account for epenthesis, as a BT specific process in Valencian Catalan.

(22)   FootMinσ » Dep BT Seg

Dep BT Seg (Benua 16): every segment in the truncated form has a correspondent in the base. (One * for each epenthetic segment).

The next tableau demonstrates the validity of the previous ranking.

(23)

Base: bi(sén)	FootMinσ	Dep BT Seg
☞ a. (sén.to)		(t)o
b. (sén)	*!	

Dep BT Seg is unavoidably violated by Valencian truncated candidates that need to epenthesize elements to keep syllable minimalism. Alternatively, we will see shortly how regular stress assignment does not allow epenthesis to go along with FootMinσ.

On the other hand, Eastern Catalan does not need to epenthesize any segments to comply with syllable minimalism. For these languages, Dep BT Seg outranks FootMinσ, allowing a monosyllabic bimoraic nickname.

(24)

Base: bi (sén)	Dep BT Seg	FootMinσ
☞ a. (sén)		*
b. (sén.to)	(t)o!	

In sum, Valencian truncated forms allow the addition of segmental material to satisfy FootMinσ and, consequently, create a disyllabic foot from a monosyllabic foot in the base.

4. Summary

The analysis of the data concludes that quantity sensitive (QS) and quantity insensitive (QI) patterns can coexist within the same language: Valencian Catalan displays a QS non-verbal regular stress system and a QI prosodic morphology. On the other hand, not all languages under study in this dissertation behave identically: unlike Valencian Catalan, Eastern Catalan is consistently QS regarding main non-verbal stress assignment and prosodic morphology.

All dialects of Catalan group together in their identical treatment of quantity sensitivity in stress assignment: main non-verbal stress is placed according to a QS algorithm, since final heavy syllables attract stress. The analysis of Catalan truncation processes supported the view that Eastern Catalan prosodic morphology is QS, because it conforms to the moraic word minimum. Conversely, Valencian Catalan truncated words do not comply with the former generalization. Truncation in Valencian Catalan only forms disyllabic results, even at the cost of introducing an epenthetical vowel.

Quantity sensitivity in main non-verbal stress assignment was achieved by ranking different constraints over QI » QS, mainly WSP-Ft and Trochee, forcing generalized trochees to emerge. The analysis on truncation relied on the view that disyllabicity was the only productive shape. The initial ranking QI » QS accounted naturally for this disyllabic pattern, especially in the case of Valencian Catalan, whose truncatory pattern only allows disyllabic results.

Notes

[1] Catalan (Veny i Clar, Recasens, Hualde, Montoya Abat) is a Romance language spoken along the Eastern Mediterranean coast of Spain, in the Balearic Islands, in small areas of Southwestern France, in the Independent Principality of Andorra (located in the Pyrenees Mountains between the limits of Spain and France) and in

the Sardinian town of Alghero. Catalan dialects are divided into two major groups: Eastern, spoken in Eastern Catalonia, France, Alghero and the Balearic Islands; and Western, spoken in Western Catalonia and the Valencian Region. Valencian Catalan or Valencian is the name given to the Western dialects spoken only in the Valencian Region.

[2] The work of Colleen Fitzgerald (2002, 2003, 2004) provides examples of other languages displaying contradicting quantity patterns. One of these languages is Tohono O'odham, a native language of Arizona, which displays different conflicting quantity patterns from the ones claimed for Catalan, i.e., QI stress system and a QS prosodic morphology.

[3] The cross-linguistic generalization that syllables are light or heavy is accounted for by the number of moras the syllable dominates, a light syllable only dominates one mora, whereas a heavy syllable dominates two.

[4] Throughout this dissertation, examples are transcribed ignoring irrelevant phonetic information. To name just a few: (1) Only vowels [a, e, i, o, u] were used, ignoring schwas in Eastern Catalan and open mid vowels (2) Rhotic allophones are ignored and simplified to [r] (3) Voiced fricatives [β, ð, γ], which alternate with [b, d, g] are not shown (4) Place assimilation in coda nasals is limited to [m, n]. Syllabic division is indicated with dots '.' and stressed syllables are marked with a stress mark over the vocalic nucleus 'á'. Transcription, unless stated otherwise, corresponds to the native dialect of the author of this study, Southern Alacantí Western Catalan.

[5] The stop [t] was erased in word-final position in the base when preceded by a homorganic nasal. It reappears in non-final position, in a liaison effect. See, among others, Bonet and Lloret or Dols Salas for more information on this common pattern in all dialects of Catalan.

[6] These constraints are decomposed from FootBin; a foot is binary under syllabic or moraic analysis (Crowhurst and Michael, Hewitt 1993, 1994).

[7] An additional candidate *(ri.ké), which adheres to HeadMatch is banned by highly ranked Trochee.

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