There is no lexicon![*]

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0. Introduction

Within generative linguistics, underlying representations have been a sine qua non. Such representations have been thought to encode what is unpredictable or not governed by rules. Within Optimality Theory (henceforth OT), even though the rules are virtually gone, this view continues. The function GEN and EVAL pair an underlying representation with an optimal output. I argue against this entrenched view here.

Specifically, I show that within the general paradigm of OT, exceptional and morphological stress in Spanish can be treated in terms of Generalized Alignment. There is no need to alter underlying representations to account for the exceptionality of a particular word or morphological category. This raises the question of whether underlying representations are necessary for anything.

This paper is organized as follows. First, I sketch out the problem of exceptional stress in Spanish nouns and verbs. Exceptions of both sorts fall into a narrow range of possibilities. I then show how normal stress and exceptional stress can be treated in terms of OT. Next, I show how a treatment in terms of parochial constraints is superior to a treatment in terms of enriched lexical representations. This raises the possibility that there are, in fact, no lexical representations to enrich.

1. The problem

The problem for OT posed by exceptional stress is that there are a number of possible analyses. In this section, I review the relevant facts and briefly sketch out the proposed analysis.

1.1. Unmarked stress in Spanish

Normal stress in Spanish falls on the penult.

(1)	monéda	'coin'	Granáda	'Granada'
	trabájo	'work'	Tolédo	'Toledo'

There are a number of ways this can be analyzed in terms of metrical theory. One possibility would be to build a trochaic foot on the right edge of the word.

[*]Thanks to Raquel Mejia and Jorge Lemus for extensive discussions of Spanish stress. Thanks also to C. Fitzgerald, A. Fountain, L. Fulmer, C. Gerfen, A. Heiberg, C. Martinez-Fabian, A.-L. Munguia-Duarte, D. Ohala, and K. Suzuki for useful discussion. All errors are my own. Note that Spanish orthography is used throughout except that stress is overtly marked even when there is no orthographic accent.

(2) x
x(x x)
monéda

Another possibility would be to exclude the final syllable via extrametricality and construct some sort of right-headed structure.

(3) x
(x x)<x>
moné da

Given only the distribution of primary stress, both analyses are possible.

1.2. Exceptional stress in Spanish

Halle & Vergnaud (1987), when faced with a similar indeterminacy in the analysis of Polish, resolve it by consideration of exceptionally stressed words.[1]

The best analysis of Spanish can also be elucidated by considering exceptional words. However, unlike in Polish, in Spanish there is also morphologically conditioned verbal stress which sheds light on the unmarked stress pattern as well.

For nouns, there are two kinds of exceptional stress patterns. First, there are words that have antepenult stress.[2]

(4)	pájaro	'bird'	estómago	'stomach'
	médico	'doctor'	América	'America'

There are also nouns with exceptional final stress.

(5)	Panamá	'Panama'	sofá	'sofa'
	café	'coffee'		

There are no words with exceptional stress further to the left than the antepenult.[3]

(6) *Cónstantino *éstomago

That the exceptional stresses are confined to a three-syllable window on the right edge of the word would seem to confirm aspects of both analyses presented above. Forms with antepenult stress can only be treated with a trochaic foot and extrametricality.

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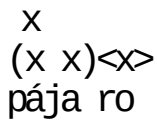
[1] See also Hammond (1989b).

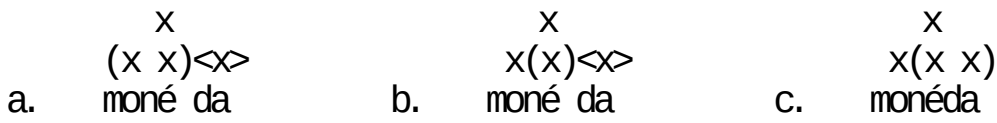
[2] Harris (1982) has argued that this pattern is restricted to words with light penults. However, there are exceptions to this pattern, e.g. *alíquota* 'aliquot'. See Lemus (in prep.) for discussion.

[3] This analysis was extensively discussed in seminar meetings at the University of Arizona and I thank Constantino Martinez Fabian for his good humor in allowing us to mispronounce his name for science....

(7)


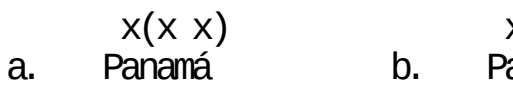
However, forms with normal penult stress are subject to at least three possible analyses. One possibility is that normal footing is iambic with extrametricality (8a). A second possibility is to build some sort of unary foot (or unbounded foot) with extrametricality (8b). A final possibility is to build a trochaic foot with no extrametricality.

(8)



There are then two possibilities for words with final stress. One possibility involves a single iambic foot (9a), while the other relies on a unary or unbounded foot (9b).

(9)



In Polish, there are morphological patterns that resolve these ambiguities. In Spanish, nominal morphology provides no help.

Verbal stress is somewhat different though and provides some clues. Individual lexical items all receive the same stress, but specific morphological paradigms exhibit the same three possibilities. Most verbal forms receive penult stress.

(10) termíno 'I finish'

Some verbal forms end up with final stress.

(11) terminé 'he finished'

Others surface with antepenult stress.

(12) terminábamos 'we would finish'

Again, there are no verbal forms that exhibit preantepenult stress.

(13) *termínabamos

So far, the verbal stress system is analogous to the nominal stress system. However, Harris (1987) maintains that these three syllabic patterns

are distributed across four basic morphological types. Pattern 1 exhibits penult stress.

(14) Pattern 1 (e.g. present)

termíno	terminámos
termínas	terminái s
termína	termínan

Pattern 2 exhibits antepenult stress in the first and second person plural forms and penult stress otherwise.

(15) Pattern 2 (e.g. imperfect)

terminába	terminábamos
terminábas	terminábais
terminába	terminában

A fairly obvious generalization for these cases is that stress always falls on the vowel following the root.

Pattern 3 exhibits ultima stress in the first and third person singular, antepenult stress in the second person plural, and penult stress otherwise.

(16) Pattern 3 (e.g. preterit)

terminé	terminámos
terminá ste	terminá steis
terminó	terminá ron

Again, stress falls on the vowel following the root. This observation allows us to conflate patterns 2 and 3.

Finally, in pattern 4, there is penult stress in the first and second person plural, ultima stress otherwise.

(17) Pattern 4 (e.g. future)

terminaré	terminarémos
terminarás	terminaréis
terminará	terminarán

If we take certain tense/mood suffixes like *-ar-* as redefining the stem, then we can say that stress falls on the vowel following the extended root. This allows us to conflate patterns 2, 3, and 4 into a single category where stress falls on the vowel following the (extended) stem.

1.3 The basic idea

Intuitively, what we have for the verbs is a stress system where normal penult stress is overridden by a constraint aligning stress with the first post-root vowel. This morphological constraint is, in turn, limited by the same restriction that limits exceptional nominal stress: stress must fall in the final trisyllabic window.

(18) Trisyllabicity
Stress must fall on one of the last three syllables.

(19) Lexical Exceptions
Certain nouns exhibit exceptional stress.

(20) Morphological Stress
Certain paradigms align stress with the first post-root vowel.

(21) Penult Default
Stress must fall on the penult.

In this intuitive statement of the problem, the critical observation is that morphological stress and lexical stress can BOTH override the normal penultimate stress pattern and can both be suppressed by the trisyllabic window constraint. This will be the basis of the argument against a lexicon distinct from the constraint component.

In the following, I outline the essential components of Optimality Theory. I show how the analysis above can be formalized, how it does away with a separate lexicon, and how it resolves the indeterminacy above.

2. Optimality Theory

Standard generative phonology posits a set of lexical items and a finite set of language-specific ordered rules. The rules apply to lexical forms to produce surface forms. If some candidate surface form is a possible output of the ordered rule set applied to some real (or potential) lexical item, the form is grammatical in the language in question.

We can characterize classical generative phonological rules as effecting some change in some context. Using SPE formalism:

(22) $\sigma \rightarrow \acute{\sigma}$ / [__

This rule assigns stress to the first syllable of some domain, say word. Such a rule would supply stress to the first syllable of underlying representations and capture the (presumed) generalization that all initial syllables are stressed.

Optimality Theory (Prince & Smolensky, 1993; McCarthy & Prince, 1993a; et seq.) can be seen as a decomposition of this process. The change performed by rules is factored out into a single operation, termed GEN. The function GEN operates freely producing a number of candidate surface forms which are winnowed through by the residue of the now passive/change-free rules. This residue is recast as a set of constraints and termed CON.

Consider how this would work in the case of a rule like (22) above. We can represent the formal decomposition from rule to GEN as in (23).

(23) a. Rule: $\sigma \rightarrow \acute{\sigma}$ / [__

b. GEN: $\sigma \rightarrow \acute{\sigma}$

The function GEN must (at least) be able to make syllables stressed. The constraint system must force the assignment of stress to initial syllables. Such a constraint can be expressed positively (24a) or negatively (24b).

(24) CON: a. [$\acute{\sigma}$ or: b. *[$\breve{\sigma}$

Consider how GEN and CON would then produce the correct output for some monosyllabic lexical item /pa/. The function GEN either adds stress or not producing two candidates for a surface form: [pa] and [pá]. Constraint (24a) or (24b) would then select [pá] over [pa].

Notice that if stress is assigned freely by GEN, many more candidate forms are generated for polysyllabic inputs. Thus an input /pata/ would have four candidate outputs: [pátá], [páta], [patá], and [pata]. While CON as formulated here forces stress on the initial syllable, it doesn't limit it to initial syllables. What this means formally is that, while CON excludes [patá] and [pata], it would allow two surface forms for /pata/: [páta] and [pátá].

This leads to two possibilities. First, this allows for surface variability in some languages (Hammond, 1994). Second, additional constraints may adjudicate between the remaining candidates, forcing a single best candidate for any input.

Let us assume the latter is the case in this hypothetical language: the generalization will be that there are no noninitial stresses and that there is a constraint to this effect. Again, such a constraint can be expressed positively (25a) or negatively (25b).

(25) a. $\sigma\breve{\sigma}$ b. *$\sigma\acute{\sigma}$

In the example above, either (25a) or (25b) would exclude [pátá] as a candidate, leaving only [páta].

Consider now how multiple constraints are combined into CON. First, the positive and negative constraints in (24) and (25) can be combined freely, giving four possible choices for CON.

(26) a. [$\acute{\sigma}$ $\sigma\breve{\sigma}$ c. *[$\breve{\sigma}$ $\sigma\breve{\sigma}$

b. [$\acute{\sigma}$ *$\sigma\acute{\sigma}$ d. *[$\breve{\sigma}$ *$\sigma\acute{\sigma}$

Second, note that each of these systems is somewhat redundant in that there is no overlap in the environments of the two constraints: one applies to all initial syllables and the other to all noninitial syllables. This strict partitioning forces the constraints to be more complex than they need to be.

Within OT, this complexity is eliminated by use of strict ranking and violability. Strict ranking establishes a priority among constraints in the set CON. Violability allows lower ranked constraints to be violated if higher ranked constraints are unviolated.

Consider (26a). If we rank the first constraint higher than the second, then violations of the second can be overridden by satisfaction of the first and the second can be simplified to: σ̆. This is shown in the following tableaux. In (27), the two original constraints are unranked. The input is indicated in the upper left corner, candidate forms are given along the left, and constraints are presented along the top. The absence of ranking is denoted with the comma and dotted line. Constraint violations are indicated with asterisks and the optimal candidate with the pointing finger.

(27) {[σ́, σ σ̆}

/pata/	[σ́	σ σ̆
☞ páta		
pátá		*!
patá	*!	*!
pata	*!	

In (28), the ranked alternative constraints are presented. Ranking is indicated with ">>", and a solid line.

(28) [σ́ >> σ σ̆

	/pata/	[σ́	σ̆
a	☞ páta		*
b	pátá		**!
c	patá	*!	*
d	pata	*!	

Strict ranking ensures that candidate (28a) is selected over (28d). Violability allows (28a) to be selected even though it violates the second constraint, because it is the best candidate of the lot. (In this case, no other candidate is possible because of the limitations we have imposed on GEN.)

These constraints can actually be ranked the other way as well, with the effect that the other constraint can be simplified instead. This is shown in (29).

(29) σ σ̆ >> σ́

	/pata/	σ σ̆	[σ́
a	☞ páta		*
b	pátá	*!	
c	patá	*!	*
d	pata		**!

This is true for all the options in (26).

(30)

unranked		ranked		reversed	
[σ́	σ σ̆	[σ́	σ̆	σ σ̆	σ́
*[σ̆	σ σ̆	*[σ̆	σ̆	σ σ̆	*σ̆
[σ́	*σ σ́	[σ́	*σ́	*σ σ́	σ́
*[σ̆	*σ σ́	*[σ̆	*σ́	*σ σ́	*σ̆

Nothing we have said so far chooses among the eight ranked options for CON. In richer constraint systems where GEN can do more, the options are reduced.[4]

3. Stress in OT

In the analysis that follows, we will draw on certain constraints and constraint schemata that have been established in the OT literature (cited above). These are reviewed in this section.

First, we have several constraints on feet.

(31) FTBIN: Feet are binary.

(32) PARSE: Syllables are footed.

These are self-explanatory.

There are also constraints on stress per se.

(33) WEIGHT-TO-STRESS (WSP): Heavy syllables are stressed.

The theory of Generalized Alignment (McCarthy & Prince, 1993b) will be extremely important in what follows.

(34) GENERALIZED ALIGNMENT (GA)

Align(Cat1, Edge1, Cat2, Edge2) $=_{def}$
$\forall$ Cat1 $\exists$ Cat2 such that Edge1 of Cat1 and Edge2 of Cat2 coincide,
where
Cat1, Cat2 $\in$ PCat $\cup$ GCat (Prosodic and Grammatical categories)
Edge1, Edge2 $\in$ {Right, Left}

GA provides a schema for capturing, e.g. the headedness of feet.

(35) a. left-headed: ALIGN(Σ, L, H(Σ), L)
b. right-headed: ALIGN(Σ, R, H(Σ), R)

GA can also be used to account for directionality.

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[4]It would be real interesting to establish this formally, but this is not germane here.

(36) a. left-to-right: ALIGN(Σ, L, Word, L)
b. right-to-left: ALIGN(Σ, R, Word, R)

Iterativity results from the ranking of these with respect to PARSE.

There is a constraint that is the functional equivalent of extrametricality.

(37) NONFINALITY: The final syllable is unfooted.

This can be recast in GA terms by requiring that words end in an unparsed syllable.

(38) ALIGN(Word, R, <σ>, R)

Finally, we must require that words get at least one stress. In OT terms, this is usually done with LXWD=PRWD, which requires that content words be prosodic words, where prosodic words must include at least one foot. We adopt an earlier formulation (Hammond, 1988).

(39) ROOTING: Content words must be stressed.

4. Spanish analysis

Let us now return to the analysis of Spanish. Recall that we were left with an indeterminacy in analyzing forms with normal penult stress and forms with exceptional final stress. These indeterminacies disappear under the OT-based analysis. In this section, we show how both of the exceptional cases—ultima and antepenult—can be treated by aligning the heads of feet on a lexical or morphological basis. This restricts the set of possible exceptional patterns in the world and limits exceptions in Spanish to the reported positions.

There are, however, two ways in which exceptional stress can be encoded: altering lexical representations or parochial constraints. We will argue for the latter (contra Inkelas, 1994).

Normal stress can be treated in two ways. One possibility would be to build an iambic foot with extrametricality. This can be done by invoking the following constraints. First, ROOTING forces words to be stressed. Second, ALIGN(Word, R, Σ, R) forces right-to-left footing. Third, ALIGN(Word, R, <σ>, R) over the preceding constraint provides for extrametricality. Finally, ALIGN(Σ, R, H(Σ), R) forces iambic feet. These are exemplified in the following tableau.[5]

[5]In this and all following tableaux, GA constraints are abbreviated "A(α)", where α is one of the terms in the GA schema (34).

(40)

	/moneda/	ROOTING	A(<σ>)	A(H(Σ))	A(Σ)
a	moneda				
b	mo(néda)	*!			
c	mo(nedá)		*!	*!	
d	☞ (moné)da		*!		*
e	(móne)da			*!	*

On this analysis, antepenult stress is achieved by forcing the head of the foot to occur on the left of the foot. Let us assume that this is accomplished with parochial constraints aligning the head of the foot with the left edge of specific words, e.g.

(41) ALIGN(*pájaro*, L, H(Σ), L)

This constraint must outrank the general iambic constraint.

(42) ALIGN(*pájaro*, L, H(Σ), L) >> ALIGN(Σ, R, H(Σ), R)

Since there are words longer than trisyllables that exhibit antepenult stress, such constraints cannot outrank the directionality constraint.

(43) ALIGN(Word, R, Σ, R) >> ALIGN(*América*, L, H(Σ), L)

The opposite ranking would allow for **Ámerica*. Such forms are unattested. The full ranking so far is:

(44) ALIGN(Word, R, <σ>, R)
ALIGN(Word, R, Σ, R)
ALIGN(*pájaro*, L, H(Σ), L), ...
ALIGN(Σ, R, H(Σ), R)

Final stress can be treated with a parochial constraint forcing the H(Σ) to the right edge of the word.

(45) ALIGN(*Panamá*, R, H(Σ), R)

Such a constraint must outrank the positioning of the <σ> on the right edge.

(46) ALIGN(*Panamá*, R, H(Σ), R) >> ALIGN(Word, R, <σ>, R)

This ranking is shown in (47) and exemplified in (48).

(47) ALIGN(*Panamá*, R, H(Σ), R), ...
ALIGN(Word, R, <σ>, R)
ALIGN(Word, R, Σ, R)
ALIGN(*pájaro*, L, H(Σ), L), ...
ALIGN(Σ, R, H(Σ), R)

(48)

/panama/	A(*Pan*)	A(<σ>)	A(Σ)	A(H(Σ))
(pána)ma	*!		*	*
(paná)ma	*!		*	
pa(náma)	*!	*		*
☞ pa(namá)		*		

The problem with this system so far is that nothing prevents a constraint of the *pájaro*-type from occurring with the same ranking as a constraint of the *panamá*-type. In a quadrisyllabic word or longer, such a ranking would predict incorrect/impossible initial stress.

(49)

/america/	A(*Amer*)	A(<σ>)	A(Σ)	A(H(Σ))
ame(ricá)	***!	*		
ame(ríca)	**!	*		*
a(merí)ca	**!		*	
a(méri)ca	*!		*	*
(amé)rica	*!		**	
☞ (áme)rica			**	*

There are three ways of avoiding this. One possibility is to maintain that only instances of constraints like ALIGN(*Panamá*) may outrank extrametricality. This solution is rather stipulatory though.

Another possibility is to split extrametricality into two separate constraints, say, NOCLOSER and NOFURTHER. All parochial constraints would go below NOFURTHER, but above NOCLOSER.

NOFURTHER, in fact, is directionality <u>if we assume that extrametrical syllables don't count in determining violations of directionality</u>. In other words, directionality outranks any parochial constraint and limits exceptional stress to the antepenult and ultima. Extrametricality is outranked by the parochial constraints, allowing for final stress.

(50) ALIGN(Word, R, Σ, R)
parochial constraints....
ALIGN(Word, R, <σ>, R)
ALIGN(Σ, R, H(Σ), R)

This analysis thus restricts stress to the final three syllables by ranking the exceptional patterns in the middle of a more general hierarchy.[6]

Notice that this would NOT be possible if exceptions were represented in lexical representations. Such representations are, definitionally, outside the hierarchy, and thus not subject to it.[7]

Consider now the treatment of exceptional verbal stress. Recall that certain paradigms stress the first poststem syllable. Under the alignment approach, this is treated by aligning the head of a foot with the end of certain stems.

(51) ALIGN(preterit, R, H(Σ), L)

The fact that there are no cases like (13) follows from the fact that constraints like (51) would also be ranked below directionality.

Verbs provide two arguments against lexical marking. First, as with the nouns, one would have to come up with some way to prevent preantepenult stress. In addition, note that the morphemes that ultimately bear stress in the exceptional paradigms are not THEMSELVES exceptional: the very same verbal desinences can occur with regular stress and irregular stress. Lexical marking would result in gross redundancies. For example:

(52)

-amos		
	stressed	
	present indicative	termin-ámos
	weak preterit	termin-ámos
	stressless	
	imperfect	terminá**b**-amos
	past subjunctive I	terminár-amos
	conditional	terminarí-amos
-emos		
	stressed	
	future	terminar-émos
	stressless	
	past subjunctive II	terminás-emos
	present subjunctive	termín-emos

We conclude then that lexical stress in Spanish should be encoded with parochial constraints aligning heads of feet. All such constraints are placed in the constraint hierarchy at the same point, as shown in (50) above.[8]

Notice that this position is distinct from Idsardi (1992). Idsardi allows—in a derivational framework—parochial alignment of either side of a

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[6] See Inkelas (1994) for a different proposal for Turkish.

[7] In classic derivational stress theory, this was dealt with by positing more abstract representations requiring conflation (Halle & Vergnaud, 1987) or lexical diacritics (Hammond, 1989b).

[8] See Tsay (1991) for a notionally similar but derivational proposal.

foot: his 'edge marking' thus allows one to manipulate lexically the position of foot heads and nonheads. This allows for more options and is not required in the treatment of Spanish.

5. Against a trochaic analysis

Consider now how a trochaic analysis might fare. In (53), I diagram how the iambic analysis above would differ from a trochaic analysis for critical cases.

(53) a. iambic:

x	x	x
x(x x)	(x x)x	x(x x)x
Panamá	monéda	América

b. trochaic:

x	x	x
x(x x)	x(x x)	x(x x)x
Panamá	monéda	América

The basic system would be guaranteed by the following constraints. First, ROOTING would force words to be stressed. Second, ALIGN(Word, R, Σ, R) forces right-to-left footing. Third, ALIGN(Σ, L, H(Σ), L) forces trochaic feet. For words with penult stress, no ranking is necessary. This is exemplified in the following tableau.

(54)

/moneda/	ROOTING	A(H(Σ))	A(Σ)
a moneda	*!		*!
b ☞ mo(néda)			
c mo(nedá)		*!	
d (moné)da		*!	*!
e (móne)da			*!

Exceptional final stress would be easily obtainable with parochial constraints that would override the general trochaic pattern. The full hierarchy is given in (55) and a sample tableau for *Panamá* in (56).

(55) Constraints: ROOTING
ALIGN(Word, R, Σ, R)
ALIGN(Σ, L, H(Σ), L)
ALIGN(*Panamá*, R, H(Σ), R), etc.

Ranking:
ALIGN(*Panamá*, R, H(Σ), R), etc. >> ALIGN(Σ, L, H(Σ), L)

(56)

/panama/	A(*Pan*)	Rooting	A(Σ)	A(H(Σ))
panama	*!	*	*	
(pána)ma	*!		*	
(paná)ma	*!		*	*
pa(náma)	*!			
☞ pa(namá)				*

Exceptional antepenult stress is more problematic, however. The problem is that such cases must be treated by invoking exceptional extrametricality. For example, a word like *pájaro* would be subject to a parochial constraint ALIGN(*pájaro*, R, <σ>, R). This is exemplified in the tableau below.[9]

(57)

/pajaro/	A(*Paj*)	Rooting	A(Σ)	A(H(Σ))
pajaro		*!	*!	
☞ (pája)ro			(*)	
(pajá)ro			(*)	*!
pa(járo)	*!			
pa(jaró)	*!			*!

There are two problems with the trochaic approach. First, it must countenance several different ways to encode exceptional items: parochial constraints governing the alignment of heads and parochial constraints governing the alignment of unparsed syllables. On the iambic view, there is only one way to encode exceptional stress: parochial constraints governing the alignment of heads.

The second problem is that the treatment of antepenultimate nominal stress under the trochaic analysis does not generalize to verbs. Recall that verbs also exhibit antepenultimate stress, e.g. *terminábamos*. Such forms <u>cannot</u> be treated with a GA constraint of the form (58).

(58) ALIGN(*terminábamos*, R,<σ>, R)

The problem is that, as discussed above, verbal inflectional paradigms are organized so that the overriding generalization is <u>not</u> that certain paradigms exhibit antepenultimate stress or not, but that certain paradigms align stress with the edge of the stem, occasionally producing antepenultimate stress. Under the trochaic analysis, this generalization cannot be captured without allowing for the possibility of generating unattested preantepenultimate stress.

[9]Notice that we have no evidence for the ranking of ALIGN(*pájaro*) on this view. If we adopt the same convention as in the preceding section where extrametricality does not induce a violation of directionality, then ALIGN(*pájaro*) can occur anywhere in the constraint hierarchy. The relevant violations are indicated with parentheses in (57).

The argument goes as follows. To capture the generalization that certain verbal paradigms exhibit occasional antepenultimate stress when the poststem syllable is the antepenult, we would need to say that the alignment of stress with verbal stems outranks the alignment of the foot with the right edge of the word. This indeed allows antepenult stress, but once this ranking is established, it would also allow preantepenult stress, e.g. **termínabamos*.

Under the iambic analysis, this problem does not arise. Antepenult stress for nouns and verbs is guaranteed by the same machinery: parochial constraints governing the alignment of heads. Moreover, by virtue of the ranking of such constraints, the iambic analysis guarantees that preantepenult stress is impossible for both nouns and verbs.

Summarizing, the OT analysis eliminates the indeterminacy in the unmarked headedness of feet in Spanish: feet are iambic.

6. Conclusion

I have argued that exceptional nominal and verbal stress in Spanish should be treated in terms of parochial constraints governing the alignment of the heads of feet. This result leads to an interesting hypothesis. If the lexical positioning of stress can be treated with specific constraints, perhaps other aspects of lexical form can be treated in terms of constraints, or even all aspects of lexical form can be treated as constraints.

Demonstrating the empirical need for this would demand far more space, but let us outline what this would entail and some potential benefits.

Consider, for example, the fact that CAT is pronounced [kæt]. This sort of fact can be removed from the lexicon and reformalized as a constraint.

(59) CAT = [kæt]

There are at least two immediate advantages of this proposal.

First, PARSE and FILL become unnecessary. The fact that CAT is pronounced [kæt] and not *[Akæt] or *[<k>æt] emerges from the pressure on the system from (59).

A second advantage of constraints like (59) is that they can be ranked with other constraints. Fitzgerald (1994) argues that this must be true at least for affixes. She argues that while reduplication in Tohono O'odham (Papago) is normally restricted to plurals, RED=PLURAL, this constraint is outranked by constraints of the metrical system. This allows reduplication to occur in other contexts under metrical pressure.

In summary, I have argued that exceptional stress in Spanish can be treated in terms of OT. This analysis argues for the lexical placing of foot heads and that this placement be by ranked violable constraints, rather than by lexical representations. This result suggests that we should entertain the possibility that there may be very little—if anything—left for the lexicon.

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