

# Attraction to the Unmarked in Old Spanish Leveling

Richard E. Morris

Middle Tennessee State University

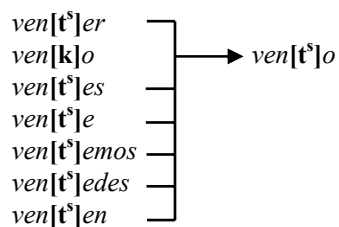
## 1. Introduction

Leveling is a mechanism that restores or imposes uniformity on paradigms, thereby upholding the principle “one meaning - one form” (Humboldt’s Universal). In a set of inflectionally-related forms, the shared element is the verb stem, whose meaning is constant across all forms. The principle of one-meaning-one-form is contravened whenever a stem alternation arises as the result of a phonological process that is conditioned in some of the forms but not others, and a common solution to this mismatch is paradigm leveling.

For the most part, discussions on leveling deal with why a given instance of leveling operates in the direction it does. Take for example a stem with two alternants. Leveling has two choices as to which alternant may serve as the “attractor,” since either alternant is viable as an output form. What we find, however, is that leveling does not depend on the flip of a coin; rather, it is guided by several general principles that exert varying degrees of influence on the outcome. One of these appears to be phonological markedness.

Figure (1) shows a classic case of leveling from Old Spanish. At this stage of the language, the verb *vençer* ‘to win’ (and many like it, such as *mereçer*, *conoçer*, *ofreçer*...) displayed a stem alternation that was the result of palatalization and affrication. This change was regularly conditioned by a front vowel. The affricate appeared in all forms of the present indicative except the 1st singular.

(1) Leveling: *vençer* (Alvar & Pottier 1993:188)



Greenberg (1966: 45) observes that the 3rd singular generally accounts for the largest share of the usage of a particular verb, followed by 1st singular and 2nd singular (cf. also Bybee 1985). These findings concur with observations made by Kuryłowicz (1949) regarding “sphere of usage,” or token frequency. The high frequency of the 3rd singular is essentially a symptom of its broad applicability in real-world situations. It is not too surprising that when the *vençer* paradigm leveled, it pivoted on the alternant that was represented not only by the 3rd singular stem, but also by the majority of forms of the present indicative paradigm.

With Greenberg and others, Bybee (1985: 210) proposes that the unmarked member of a paradigm is often the one that is zero-marked. This is true of *vençer*, in which the 3rd singular form [ventʃe] has no person suffix. However, not all examples follow this tidy pattern. In Classical Latin, the verb *fugere* ‘to flee’ uniformly displayed short stem vowel [u] in all persons of the present indicative. In Late Latin, however, the short vowel had been replaced by [o]. A further development brought about harmony of the stem vowel before a stem-final [y]. This development is shown in (2).

(2) Leveling: *fugere* (Alvar & Pottier 1993: 167; Lloyd 1987: 162; Penny 2002: 64, 67)

Classical Latin	Late Latin	Modern Spanish
<i>fugere</i>	<i>fogir</i>	<i>huir</i>
<i>fugiō</i>	<b><i>fugyo</i></b>	<i>huyo</i>
<i>fugis</i>	<i>foges</i>	<i>huyes</i>
<i>fugit</i>	<i>foge</i>	<i>huye</i>
<i>fugimus</i>	<i>fogimos</i>	<i>huimos</i>
<i>fugitis</i>	<i>fogites</i>	<i>huis</i>
<i>fugent</i>	<i>fogen</i>	<i>huyen</i>

In this example, Late Latin 1st singular *fugyo* shows the effects of vowel harmony, conditioned by a stem-final [y], which in the present indicative was found only in this form. Modern Spanish displays a generalization of the harmonic pattern to all present indicative forms as well as the infinitive. This pattern is opposite what we observed above for *vençer*; whereas in the *vençer* paradigm the winning alternant was found in a majority of forms, in the case of *fugyo*, the winning alternant was found only in one form, the 1st singular. Thus we cannot attribute the direction of leveling solely to frequency, or zero marking.

Bybee (1985: 74) also concedes that it is also possible for a “derived” form to serve as the basis for leveling. Under the conditions she describes, the derived form has typically achieved a level of lexical autonomy within the paradigm, by virtue of some surface irregularity. Thus we might say that the surface irregularity of the form *fugyo* relative to the other forms is what enables it to serve as the basis for the leveling of the other forms.

Several Latin examples support this trend for Spanish. In Classical Latin, the present tense occasionally displayed a nasal insert that was not found in other tenses; thus we find present singulars *rūmpō* and *vincō* alongside preterites *rūpī* and *vīcī*. In line with Bybee’s observation, the paradigm has been leveled in favor of the derived alternant, thus modern Spanish shows *rompo* ~ *rompí* and *venzo* ~ *vencí*. Another well-studied Latin example involves the fate of the Classical Latin nominative *honos*. Originally, the paradigm displayed a consonant alternation (*honos* ~ *honōris*) resulting from a regular rule that rhoticized /s/ intervocalically. Nominative singular *honos* was later leveled in favor of the /r/- alternant, thus: *honor* ~ *honōris*. Both of these Latin examples demonstrate leveling that favored a derived alternant. The *honos* example provides further evidence that the attractor in leveling need not be the most frequent form in the paradigm. Had this been the case, then *honos* would have served as the basis for leveling.

There is also more recent evidence of this leveling trend. In Old Spanish we find *oyo* ‘I hear’ alternating with *\*oes* ‘you hear’, *\*oe* ‘he hears’, *\*oen* ‘they hear’, etc. The medial *y* was phonologically conditioned in *oyo* only (Alvar & Pottier 1983: 220; Penny 2002: 175). In Modern Spanish, all stem-stressed forms of the present tense have been leveled in favor of the derived stem alternant, thus *oyo*, *oyes*, *oye*, *oyen*. In this case leveling was based on a form that was neither zero-marked nor the most frequent.

This paper aims to account for the two types of leveling attested in Old Spanish in terms of their phonological - rather than semantic - markedness. The framework is McCarthy’s (2001) Optimal Paradigms (OP) model. In this model, which builds within Correspondence Theory (McCarthy & Prince 1996), an entire verb paradigm is evaluated for satisfaction of constraints on structure and faithfulness, and violations are incurred by the paradigm as a whole. It will be shown that the OP model illuminates several issues of markedness in leveling, including identification of the attractor, Over- and Underapplication of processes, and competition between output forms. Finally, shortcomings and limitations of the OP model will be considered.

## 2. Previous approaches

In rule-based approaches, leveling poses a paradoxical problem because the simplification of surface forms must be represented as an idiosyncratic complication in the lexical representation of specific inputs. Hock (1991: 260) sums up the situation as follows:

...[I]n terms of the synchronic rule system, leveling cannot be accounted for as a simplification.... Rather, the process leads to a definite complication in the grammar. For as a result of leveling, certain items must now be lexically marked as exceptions....

Rule-based approaches have focused on rule transparency and opacity as key factors in leveling (cf. Kiparsky 1971; Tiersma 1978). Rules whose results are visible on the surface are preferable to rules whose results are obscured by bleeding relationships with other rules. Consequently, rules in bleeding relationships are often reconfigured so as to favor maximal application of each rule (cf. Hock 1991: 267-268). This state of affairs favors a leveling attractor that need not be identical to the input. Provided that the alternation is a transparent one, a paradigm can afford to be leveled in favor of an alternant that is not faithful to the input, given that the input is easily recovered (e.g. *vençer*).

Opaque rules pose a rather different problem. An opaque rule either holds outside or fails to hold inside its usual context. Consequently, opaque rules tend to be lexicalized, marking either the forms in which the rule fails to operate though conditioned, or the forms in which the rule operates though not conditioned. Either way, the irregularity must be encoded as a property of individual forms. It is not surprising that the solution in these stipulative cases is to revert to the input, nor is it a coincidence that this should happen primarily when the alternation is opaque. An example of this is diphthongization. Alternating diphthongs are one of the oldest features of Old Spanish. Originally, these diphthongs were conditioned by stress. Later, autonomous derived forms often retained a diphthong in unstressed position; e.g. *atiesár* < *tiéso*; *deshuesár* < *huéso*; *engruésár* < *gruésó*; *diezmár* < *diézmó*; etc. (Penny 2002: 184). These developments challenged the transparency of the diphthongization rule and made it a property of specific words. The same is definitely true of modern regional alternations such as *cuénta* ~ *cuentár* (< *cuénta* ~ *contár*) (Zamora Vicente 1967: 258; Hooper 1976: 50). In this instance, the diphthong has certainly become an underlying property of the verb *cuentár*, perhaps by its close semantic association with the autonomous noun forms *cuénto* ‘tale’ and *cuénta* ‘bill.’ Whatever the case, leveling in favor of the diphthong shows attraction to a derived form, as in the examples already discussed.

If in regional usage *contar* has leveled in favor of the diphthongizing alternant (i.e. as *cuentár*), then why did verbs with alternating stems like *aportar*, *entregar*, *confortar*, etc., level in favor of the monophthong, e.g. *apuerta* > *aporta*; *entriega* > *entrega*; *confuerta* > *conforta* (cf. Menéndez Pidal 1941: 290; Lloyd 1987: 61; Penny 2002: 183)? The prediction that transparent alternations level in favor of a derived form and all opaque alternations level in favor of the input form requires cautious qualification. In this paper, it will be argued that leveling depends more strongly on phonological markedness than on transparency or opacity.

## 3. Leveling in OP

McCarthy & Prince (1996) underscore the importance of output forms in phonological relationships. The principles they develop are further formalized by Benua (1997; 2000) in the analysis of bases and truncated forms, in what has become widely known as “output-to-output correspondence.” Kenstowicz (1996) introduces a principle of Uniform Exponence (UE) to incorporate leveling into the output-to-output discussion. UE is formalized as a paradigm-specific constraint that imposes regularity depending on how it is ranked with respect to other constraints. These proposals set the stage for McCarthy’s (2001) OP theory. In essence, OP argues that candidates for evaluation are not single forms but entire paradigms. These paradigms are evaluated for satisfaction of identity and markedness constraints, and are compared at the output as in traditional Correspondence Theory. The “optimal paradigm” is the one that, as a whole, minimally violates only the lowest-ranked constraints.<sup>1</sup>

Central to McCarthy (2001) are predictions as to the types of leveling effects allowed (and therefore predicted to exist in some grammar) by OP. Two of these are already well-established for both Optimality Theory and Correspondence Theory: Overapplication and Underapplication. In Overapplication, a markedness constraint holds in the base as well as in the reduplicant, although its structural context is not actually met in the reduplicant, thus it overapplies. In OP, the effect of Overapplication permeates an entire paradigm, such that a markedness constraint may hold even in those forms where it is not conditioned. Selection of a derived stem alternant as the attractor in leveling is a direct consequence of the high ranking of some markedness constraint, which forces Overapplication (and suppresses faithfulness). Conversely, Underapplication is the failure of any member of a paradigm to satisfy a markedness constraint.

Our analysis begins with a comparison of Old Spanish *vençer* and Late Latin *fogir* in OP evaluation. Lapesa (1981) informs us that around the 9th century, the phoneme /k/ began to palatalize before the front vowels. By the 10th century, this palatal segment became replaced by a dental affricate. It was at this stage that leveling occurred. Tableaux (3) and (4) show two stages in the development of *vençer*. Note that in both tableaux, the input is the complete verb paradigm, and each of the forms that incurs a mark does so for the paradigm as a whole. The input structure shows each verb as a stem plus a suffix. Note that the root is the stem minus the final vowel.<sup>2</sup>

(3) *Vençer*: Normal application (cf. Alvar & Pottier 1993:188)

ALIGN (Suff, L, Root, R) : Align a vowel suffix with the right edge of the root.

\*KE : The sequence /ke/ is not allowed.

MAX-IO : No segmental deletion.

IDENT [DOR]: Underlying dorsal place features may not change.

	/venke]o]/ /venke]s]/ /venke]/	ALIGN	*KE	MAX-IO	IDENT [DOR]
a.	venkeo vent <sup>s</sup> es vent <sup>s</sup> e	*!	*		**
b.	vent <sup>s</sup> <e>o vent <sup>s</sup> es venke		*!	*	**
c.	venk<e>o venkes venke		*!*	*	
d.	venk<e>o ☞ vent <sup>s</sup> es vent <sup>s</sup> e			*	**
e.	vent <sup>s</sup> <e>o vent <sup>s</sup> es vent <sup>s</sup> e			*	***!

ALIGN compels theme vowel truncation. The ranking of \*KE above IDENT [DOR] allows violation of the latter only to satisfy the former. The result is alternating paradigm (3d). Notice that losing candidate (3e) is intrinsically suboptimal to candidate (3d), meaning that under either ranking of these constraints, candidate (3d) will incur fewer marks than candidate (3e).

In the second stage of development, shown in tableau (4), a high-ranking OP constraint intervenes to compel leveling:

OP-IDENT [DOR] : For every pair of output stems  $P$  and  $Q$  of input stem  $S$ , if a segment is [+dorsal] in  $P$  then its correspondent in  $Q$  is also [+dorsal].

In OP, every form in a candidate paradigm is compared to every other form, and marks may be incurred going both ways. Although there is no Base Priority (cf. Benua 1995; 2000), in evaluation every form serves as a base, of sorts, for every other form. In this example, each pairwise comparison in which corresponding segments disagree for the feature [dorsal] will cause a violation by that paradigm as a whole. For ease of exposition, paradigms that fatally violate top-ranked ALIGN are excluded from the display.

(4) *Vençer*: Overapplication (cf. Alvar & Pottier 1993:188)

/venke]o]/ /venke]s]/ /venke]/	OP-IDENT [DOR]	*KE	IDENT [DOR]
a. venk<e>o vent <sup>s</sup> es vent <sup>s</sup> e	*!*		**
b. vent <sup>s</sup> <e>o vent <sup>s</sup> es venke	*!*	*	**
c. venk<e>o venkes venke		*!*	
d. vent <sup>s</sup> <e>o ☞ vent <sup>s</sup> es vent <sup>s</sup> e			***

As tableau (4) shows, high-ranked OP-IDENT [DOR] incurs fatal marks for feature discrepancies in candidates (4a) and (4b). Of the remaining two candidates (4c) and (4d), both of which are uniform, candidate (4d) is the least marked, and therefore optimal. In McCarthy's terminology, this is an instance of "Attraction to the Unmarked" (ATU).

The primary advantage of the OP model is that selection of the affricated stem over the nonaffricated stem need not be stipulated in terms of Base Priority, since it is a direct consequence of the constraint ranking itself.

As mentioned earlier, the Late Latin verb *fogir* contained a harmonized stem vowel in the 1st singular present indicative, and this pattern was later extended throughout the present indicative and to the infinitive. Tableaux (5) and (6) show the normal application and Overapplication of harmony in this paradigm.

(5) *Fogir*: Normal application

HARMONY : A stem vowel agrees in height with a stem-final [y].<sup>3</sup>  
 \*V[+high]∅ : The last vowel in a word may not be [+high].

/fogi]o]/ /fogi]s]/ /fogi]/	HARMONY	*V[+high]∅	IDENT [HIGH]
a. fogyo fogis fogi	*!	**	
b. fogyo foges foge	*!		
c. fúgyo fúgis fúgi		*!*	*
d. fúgyo ☞ fúges fúge			***
e. fúgyo ☞ fúges fúge			****!*

(6) *Fogir*: Overapplication

/fogi]o]/ /fogi]s]/ /fogi]/	HARMONY	OP-IDENT [HIGH]	*V [+high]∅	IDENT [HIGH]
a. fogyo fogis fogi	*!		**	
b. fogyo foges foge	*!	****		
c. fúgyo fúgis fúgi		****	*!*	*
d. fúgyo ☞ fúges fúge		*****!***		***
e. fúgyo ☞ fúges fúge		****		*****

As tableau (6) shows, OP-IDENT [HIGH] incurs a violation whenever any pair of output correspondent segments differ for the feature [high]. In the *fogir* paradigm, alternations arise both in the stem vowel and theme vowel and are monitored by HARMONY and \*V[+high]∅, respectively. Optimal paradigm (6d) incurs four violations of OP-IDENT [HIGH], placing it on an evaluative par with (6c). The tie is broken by the next-highest constraint \*V[+high]∅, which (6c) fatally violates. Note that in this ranking, OP-IDENT [HIGH] is not top-ranked, but must be dominated by HARMONY; otherwise, paradigm (6a) would be chosen.

The essential advantage of OP is therefore clear: the model allows us to analyze both majority rule (*venço*) and minority rule (*fugyo*) leveling in a similar way, i.e. in terms of ATU.

In the *vençer* and *fogir* examples, the attracting stem is not a faithful representation of the input stem. However, there are examples of leveling in Old Spanish in which the attracting stem is more faithful to the input than to a surface form. The result is Underapplication. We have already mentioned the verbs *entregar*, *confortar*, *prestar*, and *aportar*, which had stem-stressed diphthongs (*entriega*, *confuerta*, *priesta*, *apuerta*) that have since reverted to monophthongs (*entrega*, *conforta*, *presta*, *aporta*) in Modern Spanish. In each instance the diphthong was part of a syllable that contained either a complex onset, a complex coda, or both, so it is probable that this reduction was phonologically conditioned. McCarthy (2001) argues that Underapplication must be triggered by a high-ranking markedness constraint that overrides the effect of OP. Tableau (7) shows the normal application of diphthongization. Tableau (8) shows how intervention by OP-MAX-IO, the constraint on segmental uniformity, yields Overapplication, which is the wrong result. Finally, tableau (9) shows how Underapplication of diphthongization may be compelled by promoting the relevant syllable structure constraint.

(7) *Aportar*: Normal application (Menéndez Pidal 1941: 290; Lloyd 1987: 61; Penny 2002: 183)

DIPH : Lexically marked vowels (E, O) diphthongize when stressed.  
 DEP-IO : No segmental insertion (violated by diphthongization).

	DIPH	DEP-IO
/apOrta <sub>1</sub> r]/ /apOrta <sub>2</sub> o]/ /apOrta <sub>3</sub> ]/		
a. apOrtár apÓrt<a>o apÓrta	*!*	
b. apwertár apwért<a>o apÓrta	*!	**
c. apOrtár apwért<a>o apÓrta	*!	*
d. apOrtár ☞ apwért<a>o apwérta		**
e. apwertár apwért<a>o apwérta		***!

(8) *Aportar*: Overapplication (unattested?)

OP-MAX-IO : For every pair of output stems *P* and *Q* of input stem *S*, a mark is incurred for every segment in *P* that does not have an output correspondent in *Q*.

/apOrta[r]/ /apOrta[o]/ /apOrta/	OP-MAX-IO	DIPH	DEP-IO
a. apOrtár ⊕ apÓrt<a>o apÓrta	**	*!*	
b. apwertár apwért<a>o apÓrta	***!*	*	**
c. apOrtár apwért<a>o apÓrta	***!*	*	*
d. apOrtár apwért<a>o apwértas	***!*		**
e. apwertár ⊖ apwért<a>o apwérta	**		***

(9) *Aportar*: Underapplication

\*DIPH & CODACOND : Diphthongs may not co-occur with heterorganic consonant clusters.<sup>4</sup>

/apOrta[r]/ /apOrta[o]/ /apOrta/	*DIPH & CODACOND	OP-MAX-IO	DIPH	DEP-IO
a. apOrtár ⊕ apÓrt<a>o apÓrta		**	**	
b. apwertár apwért<a>o apÓrta	*!*	****	*	**
c. apOrtár apwért<a>o apÓrta	*!	****	*	*
d. apOrtár apwért<a>o apwértas	*!*	****		**
e. apwertár ⊖ apwért<a>o apwérta	*!*	**		***

In tableau (8), the constraint OP-MAX-IO selects paradigm (8e), which displays Overapplication of diphthongization. If the markedness constraint \*DIPH & CODACOND dominates OP-MAX-IO, however (as in 9), then the chosen paradigm (9a) displays no diphthongization at all. What is intriguing in this case is that the OP constraint is not actually necessary for the leveling operation to take place. Leveling can be effected by the markedness constraint \*DIPH & CODACOND alone.



By itself OP precipitates ATU. However, if the OP constraint is trumped by a top-ranked markedness constraint, then leveling favors the input: Attraction to the Faithful (ATF). Other verb paradigms such as *cuénta* ~ *cuentár* historically retained the diphthong because they did not incur violation of the markedness conjunct \*DIPH & CODACOND. A form like *cuénta* does not violate this conjunct because even though it contains a diphthong and a consonant cluster, the members of the cluster are homorganic: [kwénta].<sup>5</sup>

A similar example of Underapplication is provided by the synthetic futures. In Old Spanish, most of the 2nd and 3rd conjugation futures underwent syncope of the theme vowel; however, in all but a few cases the syncope vowel was later restored. According to Penny (2002: 213), the futures most amenable to reconstruction were those that contained consonant clusters, such as in *perdrá* (<*perderá*>), *partrá* (<*partirá*>), and *vestrá* (<*vestirá*>). Here, too, we can account for ATF (restoration of the syncope vowel) by postulating a high-ranked markedness constraint that trumps the markedness constraint requiring Syncope. The constraint requiring Syncope is \*WEAK (see 10 and 11).

(10) *Perdrá*: Normal application (Mańczak 1958:319; Alvar & Pottier 1993:251; Penny 2002:211)

\*WEAK : No V in the weak position of the foot (cf. Jacobs, forthcoming)

/pErde]r]/ /pErde]/ /pErde]ra]/	DIPH	*WEAK	MAX-IO	DEP-IO
a. pErðér pÉrðe pErð<e>rá	*!		*	
b. pErðér pÉrðe pErðerá	*!	*		
c. pyerðér pyérðe pyerðerá		*!		***
d. pErðér pyérðe pErðerá		*!		*
e. pErðér ☞ pyérðe pErð<e>rá			*	*
f. pErðér pyérðe pyerð<e>rá			*	**!
g. pyerðér pyérðe pyerð<e>rá			*	**!*

(11) *Perderá*: Underapplication

\*COMPLEX & \*CODA : Tautosyllabic consonant clusters may not co-occur with syllable codas.<sup>6</sup>

/pErde]r]/ /pErde]/ /pErde]ra]/	*COMPLEX & *CODA	DIPH	*WEAK	DEP-IO
a. pErðér pÉrðe pErð<e>rá	*!	*		
b. pErðér pÉrðe pErðerá		*!	*	
c. pyerðér pyérðe pyerðerá			*	**!*
d. pErðér ☞ pyérðe pErðerá			*	*
e. pErðér pyérðe pErð<e>rá	*!			*
f. pErðér pyérðe pyerð<e>rá	*!			**
g. pyerðér pyérðe pyerð<e>rá	*!			***

Tableau (11) shows the intervention of high-ranked \*COMPLEX & \*CODA, which is violated by each three-consonant cluster. This tableau reveals two key details. First, the tie for \*WEAK between (11c) and (11d) is broken by low-ranked DEP-IO, of which (11d) incurs two fewer violations. Second, if the constraint OP-MAX-IO were included in the ranking above DIPH, it would incorrectly choose candidate (11c) as the optimal one. Thus Underapplication is not necessarily an OP operation, in that it need not impose a uniform pattern. Rather, it may permit the emergence of any number of unmarked patterns that satisfy the constraint forcing the Underapplication.

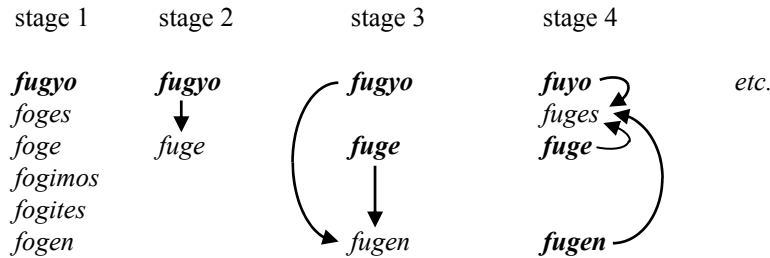
#### 4. Conclusion

The OP model of paradigm leveling provides a fairly reliable mechanism for explaining - independently of frequency or semantic markedness - the leveling of phonological alternations. The model exploits the convergence of form frequency and phonological markedness and accounts for both in terms of Attraction to the Unmarked (ATU). The data reviewed in this paper both support McCarthy's (2001) predictions regarding Over- and Underapplication in leveling and shed light on a traditionally obscure area of Spanish historical phonology. This paper has not attempted to factor in the analogical pressures exerted *across* paradigms because such an analysis was not required by the data investigated.

Despite its evident strengths, OP deals only with leveling that is total in nature. Leveling is not, however, an all-or-nothing gamble, but rather a series of discrete changes, the sum of which presents a leveled paradigm. For example, in the leveling of *fugyo, foges, foge*, etc., the *fo*-stems did not become *fu*-stems all at once. Rather this battle was won one form at a time, in a series of binary or even ternary analogies, until no *fo*-stems were left. A possible progression is illustrated in (12) below. Each stage shows one (or more) forms exerting pressure on another form, shown by arrows. Although

pressure is exerted on all forms simultaneously, forms with higher frequency cave in to the change sooner than forms with lower frequency (cf. Bybee 1976; 1994; 2001). With each change, the pressure on the remaining form(s) increases.

(12) Leveling in progress



During the intermediate stages of this hypothetical progression, the stem vowel alternates. It is unclear how OP could accommodate these stages, since any vowel alternation in any proportion would be evaluated as suboptimal to a uniformly represented vowel. Although OP may accurately predict the final outcome of paradigm leveling, it does not appear to be equipped, as it is currently formulated, to account for the crucial intervening stages.

**Notes**

- \* I would like to thank the audience at the 7th Hispanic Linguistics Symposium (October 2003) for insightful discussion and comments. All errors remain my own.
- 1. This is an inherent proposal of Benua’s (1995; 2000) original theory. In her analysis of the generalization of the prefix *deh-* before vowel-initial bases in dialectal Spanish (e.g. *deshecho* [de.he.čo.]), Benua (2000: 237) notes:  
 Since both allomorphs *deh-* and *des-* are properly conditioned in some prefixed words but not in others, the allomorph that imposes its phonology on all other realizations of the affix should be the one that violates the lowest-ranked constraints in the grammar.
- 2. The morphological divisions assumed here are based upon those proposed by Schane (1976), Cressey (1978), and others. Here we include the theme vowel as a component of the stem, in keeping with the principle that the stem is composed of the lexical root plus theme vowel (cf. Schane 1976: 59).
- 3. HARMONY spreads one position from the theme vowel (stem-final vowel) to the stem vowel. For a thorough survey of the broader issues involved in describing vowel harmony in constraint interaction, please see Kirchner (1993) and Baković (2003).
- 4. This constraint is a local conjunct of two constraints, violated if and only if both members are violated. For specifics on local constraint conjunction, see Kirchner (1995) and Smolensky (1995).
- 5. Generalization of the monophthong is also attested both historically and dialectally (modern Asturian); e.g. *cuntar* ~ *cunta* (Zamora Vicente 1967: 180). In this instance, it appears that a markedness constraint prohibits diphthongs that co-occur with *any* consonant coda (homorganic or not), and that the underlying stem vowel is /u/.
- 6. The constraint is formulated as a conjunct because \*COMPLEX alone would also target the many syncopated forms that were never restored, such as *habrá*, *sabrà*, *podrà*, etc. This conjunct rejects forms containing three-consonant clusters, yet permits those containing only two.

**References**

Alvar, Manuel & Bernard Pottier. 1993. *Morfología histórica del español*. Madrid: Gredos.  
 Baković, Eric. 2003. Vowel harmony and stem identity. Ms. ROA #540.  
 Benua, Laura. 1995. Identity effects in morphological truncation. In Jill Beckman, Laura Walsh Dickey & Suzanne Urbanczyk (eds.), *Papers in Optimality Theory*. University of Massachusetts Occasional Papers in Linguistics 18. Amherst, MA: Graduate Linguistic Student Association. 77-136.

- . 2000. *Phonological Relations between Words*. New York: Garland.
- Bybee, Joan L. 1985. *Morphology: A Study of the Relation between Meaning and Form*. Amsterdam: Benjamins.
- . 1994. A view of phonology from a cognitive and functional perspective. *Cognitive Linguistics* 5-4: 285-305.
- . 2001. *Phonology and Language Use*. Cambridge: Cambridge University Press.
- Cressey, William W. 1978. *Spanish Phonology and Morphology: A Generative View*. Washington, DC: George Washington University Press.
- Greenberg, Joseph H. 1966. *Language Universals, with Special Reference to Feature Hierarchies*. The Hague: Mouton.
- Hock, Hans Henrich. 1991. *Principles of Historical Linguistics*. Berlin: Mouton de Gruyter. 2nd ed.
- Jacobs, Haike. forthcoming. Rhythmic vowel deletion in OT: Syncope in Latin. *Probus*.
- Kenstowicz, Michael. 1996. Base-identity and uniform exponence: Alternatives to cyclicity. Ms. ROA #103.
- Kiparsky, Paul. 1971. Historical linguistics. In W. Dingwall (ed.), *A Survey of Linguistic Science*. College Park, Maryland: University of Maryland Linguistics Program.
- Kirchner, Robert. 1993. Turkish vowel harmony: An Optimality Theoretic account. Ms. ROA #4.
- . 1995. Going the distance: Synchronic chain shifts in OT. Ms. ROA #66.
- Kuryłowicz, Jerzy. 1949. La nature des procès dits «analogiques». *Acta Linguistica* 5: 15-37.
- Lapesa, Rafael. 1981. *Historia de la lengua española*. Madrid: Gredos. 9th ed.
- Leben, William R. & Orrin W. Robinson. 1977. 'Upside-down' phonology. *Language* 53(1): 1-20.
- Mańczak, Witold. 1958. Tendances générales des changements analogiques. *Lingua* 7: 298-325; 387-420.
- Menéndez Pidal, Ramón. 1941. *Manual de gramática histórica española*. Madrid: Espasa-Calpe. 6th ed.
- McCarthy, John J. 2001. Optimal paradigms. Ms. ROA #485.
- & Alan Prince. 1995. Faithfulness and reduplicative identity. In J. Beckman, L. Walsh Dickey & S. Urbanczyk (eds.), *University of Massachusetts Occasional Papers in Linguistics* 18. 249-384.
- Penny, Ralph. 2002. *A History of the Spanish Language*. Cambridge: Cambridge University Press. 2nd ed.
- Prince, Alan & Paul Smolensky. 1993. *Optimality Theory: Constraint Interaction in Generative Grammar*. Rutgers University Cognitive Science Center.
- Schane, Sanford. 1976. Truncation and stress in Spanish. In Marta Luján & Frederick Gerald Hensey (eds.), *Current Studies in Romance Linguistics*. Washington, DC: Georgetown University Press.
- Smolensky, Paul. 1995. On the structure of the constraint component Con of UG. Ms. ROA #86.
- Tiersma, Peter. 1978. Bidirectional leveling as evidence for relational rules. *Lingua* 45: 65-77.
- Zamora Vicente, Alonso. 1967. *Dialectología española*. Madrid: Gredos. 2nd ed.

Richard E. Morris  
 Department of Foreign Languages and Literatures  
 Middle Tennessee State University  
 Murfreesboro, TN 37132  
 rmorris@mtsu.edu