When Small Words Collide
Morphological Reduction and Phonological Compensation in Old Leonese Contractions

MINTA ELSMAN AND D. ERIC HOLT
University of South Carolina

THE PHENOMENON of the grammaticalization of lexical words into function words has received much attention in various fields of linguistics (Hopper and Traugott 1993, among numerous works). While grammaticalization usually results in the phonological reduction of the words in question, this reduction does not usually lead to the loss of semantic recoverability. However, function words are inherently phonologically short, so any reduction resulting from grammaticalization would incur a proportionally greater loss to the surface realization of their meaning. An example of such grammaticalization comes from Medieval Leonese, and a close analysis of this data suggests that, as function words are grammaticalized and undergo phonological reduction, individual features take on a correspondingly greater role in distinguishing meaning that was previously represented by entire segments.

The following section presents the Leonese preposition + article contraction data that motivate the theoretical claims of the article, subsequent sections lay out our formal assumptions and present tableaux and explications of the varying success of the competing candidates across related forms and dialects, and the final section offers a summary and concluding remarks and discusses avenues for further research.

Leonese Preposition + Article Combinations and Grammaticalization
Tuten (2003) discusses the contraction of preposition + article sequences into single words in various regions of Medieval Spain, and here we focus our attention on Leonese, which we have decomposed for expository purposes into palatalizing and nonpalatalizing varieties.1 (Data adapted from Tuten 2003, 115–17, based mainly on Menéndez-Pidal 1964, 330–39, and Staaff 1907, 253–58. Note that nn = [n]; ll = [ʎ].)2

In the contractions listed above, the preposition and article form a single word that is in some instances phonologically distinct from either of its components; for example, despite the existence of the contraction connas (table 3.1) there exists no preposition conn or article nnas or as.

The data by Tuten represent a unique case of grammaticalization of function words into even smaller morphemic units, and the phonological reduction that results...
threatens the surface representation of these forms. In what follows, we show how the burden of morphological representation shifts from the segmental to the featural level to prevent the complete loss of surface forms that are already short.

**Theoretical Preliminaries/Constraints**

The phonological changes that resulted from preposition + article contraction suggest that the underlying forms of these contractions violated certain highly-ranked markedness constraints that mandated phonological simplification of the surface form.

(1) *#l: no word initial [l]; initial l- tends to palatalize in Leonese (Menéndez-Pidal 1962, 64–68).

*#nn: no word-initial palatal [ɲ]: word-initial palatal [ɲ] is rare in modern Spanish, appearing much less frequently than palatal [ʎ] or nonpalatal [n].

*PAL: Palatal consonants are marked (Baković 2001; Zubritskaya 1997).

SYLCON: Sonority may not rise across a syllable boundary (Gouskova 2001; Hooper 1976; Murray and Vennemann 1983).

In the case of grammaticalization of “little words” to bound morphemes presented here, phonological changes that might satisfy the above markedness constraints threaten the adequate representation of meaning, as the deletion or alteration of a single segment severely reduces the surface forms of morphemes that are already quite small. Thus faithfulness constraints are required to ensure that meaning is repre-
sented in the output via the preservation of entire segments [by the constraints in (2)] or individual features [by the constraints in (3)].

(2) **MAX**: Input segments must have output correspondents (McCarthy 1995).  
**DEP**: Output segments must have input correspondents (McCarthy 1995).  
**COALESCE**: No element of the output has multiple correspondents in the input (McCarthy 1995, “**UNIFORMITY**”).  
**CONTIGSTEM**: Stem morphemes contiguous in the input must be contiguous in the output (“No epenthesis between stems”).

(3) **MAX-FMS**: The input features of a monosegmental morpheme must be preserved in the output (adapted from Casali 1997).  
**MAX-[C-Place]**: C-Place nodes in the input must be present in the output (see Lombardi 2001 for Max-F constraints).

The features relevant to the analysis here are **[nasal]**, which distinguishes palatal nasals from palatal laterals, **[dor]**, which distinguishes between nasals, and **[cont]**, which distinguishes between rhotics. Also relevant is the number of C-Place nodes, which distinguishes palatal from alveolar nasals and laterals. (Features that distinguish pairs of segments are indicated in bold.)

By focusing on the featural level, faithfulness constraints such as **MAX-FMS** and **MAX-[C-Place]** may preserve some surface representation of a meaningful segment, even when the segment itself is deleted. In addition, the selection of the morpheme to be preserved may be determined based on its function, as formalized in the following constraint.

![Figure 3.1 Structural Representation of Nasals, Laterals, and Rhotics](image-url)
(4) MAX-FMORPHSYN: Input features of syntactic morphemes must be preserved in the output.

This constraint is consistent with the fact that functional morphemes are often shorter than lexical morphemes and therefore subject to proportionately greater loss at the level of phonological representation. In the contractions examined here, the gender (o/a) and number (s) affixes found on the definite articles are considered “syntactic” morphemes, as they link constituents within a clause by marking agreement between nouns and their articles. The prepositions are similarly syntactic, in that they act as case markers (Penny 1991, 194) for determiner phrases and noun phrases, linking them with a verb in the clause. In contrast, the definiteness morpheme (l) of the articles does not link syntactic constituents but rather serves a discourse/pragmatic function of marking specificity. The distinction between syntactic versus nonsyntactic morphemes plays a crucial role in the selection of the optimal forms, as explained in the following section.

Tableaux and Explications

The constraint ranking proposed for Palatalizing Leonese (PL) is as follows:

\[ *\#l, *\#nn, SYLCON, *ContigStem, MAX-[C-Place] \]
\[ MAX-FSynMorph, MAX-FMS, Coalesce \] Dep \[ *Pal \]

Although the proposed constraints are ranked within groups, two constraint relations uniquely distinguish the PL dialect. First, MAX-[C-Place] \[ *Pal \] determines that, all other things being equal, palatalization, though marked, is permitted if it preserves a C-Place node that is deleted in all nonpalatalized candidates. Second, the lack of a relative ranking between MAX-FSYNMORPH and MAX-FMS gives equal priority to the preservation of the features of syntactic morphemes and those of all monosegmental morphemes, syntactic or not. The effects of both of these relationships can be seen in the output form of the contraction /con + la/.3

When con and la come together, the abutting segments violate syllable contact restrictions, ruling out [conla]. All other candidates avoid this violation, either by

\begin{table}
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\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline
/con + la/ & *\#l & *\#nn & SYLCON & CONTIG & MAX-[C-Place] & MAX-FSYNMORPH & MAX-FMS & COALESC \hline
conla & & & *! & & & & & * \hline
conela & & & & *! & & & & \hline
cona & & & *! & * & * & & & \hline
cola & & & *! & * & * & & & \hline
*\#colla [ʎ] & & & & * & * & * & & \hline
*\#conna [ɲ] & & & & * & * & * & & \hline
\end{tabular}
\caption{Table 3.1 con + la > colla, conna}
\end{table}
epenthesis ([conela]), loss ([cona], [cola]), or coalescence-cum-palatalization ([colla], [conna]). The latter are evaluated as optimal because they violate no high-ranking constraints, and the palatalized output best preserves the input features of both the syntactic morpheme con and the definiteness morpheme l. [colla] violates MAX-FSYNMORPH, because [nasal] is part of the syntactic (case-marking) preposition but does not violate MAX-FMS, as the features of the monosegmental definiteness morpheme l are present in surface ll [ʎ]. [conna] violates MAX-FMS, because the [nasal] feature of /n/, part of the syntactic (case-marking) con, remains intact. Figures 3.2 and 3.3 illustrate this.4

Because MAX-FSYNMORPH and MAX-FMS are unranked relative to each other, and because colla and conna each violates only one of these constraints while violating none of the higher-ranked constraints, either output is possible. (For variation in optimality theory [OT], see Anttila 2002.) These forms are also preferred to [cona] and [cola], because cona and cola fail to preserve the C-Place of both the preposition and article consonants, which conna and colla do, due to the low ranking of *PAL.5

Given the conna–colla variation, it is reasonable to expect similar patterns for en + la and por + la, yet each of these contractions has only one optimal form. First, en + la is expected to yield both [enna]–[ella], yet only the former is grammatical. We propose that the underlying form of the preposition en in the PL preposition + article
contractions is not /en/ but /n/ (a hypothesis that receives further support from the non-palatalizing dialect, which shows na).

The realization of /n + la/ as [nla] violates SYLCON, which the other candidates avoid, through epenthesis ([nla]), deletion ([na], [la]), or coalescence via palatalization ([nna], [lla]). Candidate [lla] is less optimal than [nna], as it violates both MAX-FSYNMORPH and MAX-FMS by deleting the [nasal] feature of [n], which is both a syntactic and monosegmental morpheme; likewise for [ella]. Although [nna] avoids these violations, it violates highly ranked *#nn, which is resolved via word-initial epenthesis, yielding the winning candidate enna.

For /por + la/, despite the fact that [ɾ] and [l] are both liquids, the consonant sequence in [porla] is marked (tableau 3.3). Note that in figure 3.1, [l] is characterized by a V-Place node that is [+cont], a property that contributes to sonority and that [ɾ]
WHEN SMALL WORDS COLLIDE

lac. Therefore contracting por + la results in a rise of sonority across a syllable boundary, violating SYLCON. The remaining candidates avoid this violation, again by epenthesis ([porela]), loss ([pola], [pora]), or coalescence via palatalization ([polla]), and this latter form wins, as it alone preserves the C-Place of each input segment (figure 3.4) without violating any of the highly-ranked constraints. Given the conna–colla alternation observed for [con + la], one might expect an analogous alternation of [pora]–[polla] for por + la. However, figure 3.5 illustrates that colla:conna :: polla:porra is not an accurate analogy: while both ll and nn are palatal sounds, characterized by dual C-Place articulations, rr is simply the [+cont] correlate of singly articulated tap r.

The remaining contractions, de + la and a + la, are unproblematic, as the fully faithful output forms (dela and ala) do not violate SylCon and are therefore optimal.6

Finally, the surface form of the bare article itself remains to be explained, given that its underlying form is posited as /la/.

The form la is ruled out by top-ranking *#l. Although [ela] and [ella] avoid this violation via epenthesis, this results in violations of DEP not incurred by [lla].7 The remaining competitor, [a], is ruled out by MAX-FMS, since it deletes the entire monosegmental definiteness morpheme l.

\[
\begin{array}{ccc}
[r] & + & [l] \\
\text{C-Place} & \text{C-Place} & \text{C-Place} \\
\text{[COR]} & \text{[COR]} & \text{[COR]} \\
\text{[-cont]} & \text{[-cont]} & \text{[DOR]} \\
\text{[+cont]} & & \\
\end{array}
\]

Figure 3.4 Structural Blending of por + la > polla

\[
\begin{array}{ccc}
[r] & + & [l] \\
\text{C-Place} & \text{C-Place} & \text{C-Place} \\
\text{[COR]} & \text{[COR]} & \text{[COR]} \\
\text{[-cont]} & \text{[-cont]} & \text{[DOR]} \\
\text{[+cont]} & & \\
\end{array}
\]

Figure 3.5 Structural Blending of por + la > porra Disallowed
“Nonpalatalizing” Leonese
The constraints operating in “Nonpalatalizing” Leonese (NPL) are identical to those operating in PL; however, the differing ranking of the constraints in NPL yields different output forms.

#l,*#nn, SYLCON, *ContigStem, *PAL, MAX-FSYNMORPH »
MAX-F MS, MAX-[C-Place], COALESCE » DEP

The most obvious difference is the undominated ranking of *PAL, which disallows palatalization, even when it otherwise would preserve a specific feature. The second unique characteristic of NPL is that it ranks MAX-FSYNMORPH above MAX-FMS, which allows (potentially complete) deletion of a nonsyntactic morpheme’s features, if such deletion results in an output form that satisfies higher-ranked markedness constraints and preserves the features of a syntactic morpheme, as illustrated in tableau 3.5.8

As in PL, the contraction of con + la results in a violation of SYLCON, which is resolved in the remaining candidates via epenthesis ([conela]), deletion ([cona],

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<tr>
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<th>#l</th>
<th>##nn</th>
<th>SYLCON</th>
<th>Contig Stem</th>
<th>MAX-[C-Place]</th>
<th>MAX-F</th>
<th>MAX-FSYNMORPH</th>
<th>MAX-FMS</th>
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**Tableau 3.4 la > lla**

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**Tableau 3.5 con + la > cona**
[cola]), and coalescence resulting in palatalization ([colla], [conna]). The high ranking of *PAL in this dialect rules out the palatalized forms, while the high ranking of *CONTIGMORPH rules out conela. Of the remaining candidates, [cona] is preferred to [cola] because the latter deletes the [nasal] feature from the syntactic morpheme con, fatally violating MAX-FSYNMORPH.

The output form of en + la ([ena]) is selected as that of the output form for con + la ([cona]).9

For the contraction of por + la, it is reasonable to predict that the contraction will yield *pora, as both con + la and en + la yield simplified cona and ena-na, where SYLCON is resolved by deleting the definiteness morpheme. However, the optimal form is in fact pola. Recall that in PL the maximum number of features is preserved via the coalescence that results in palatalization, an option not available in NPL due to the undominated ranking of *PAL. However, there is no undominated constraint prohibiting other types of coalescence. The realization of the [ɾ + l] sequence as [l], though different from palatalization, still constitutes a case of coalescence, because [l] preserves all of the input features of [ɾ] (figure 3.8 and tableau 3.6).

While realizing /ɾ + l/ as [l] constitutes an additive process, realizing /ɾ + l/ as [ɾ] is a subtractive one, as [l] loses both its [DOR] and its [+cont] features (figure 3.9), making [pora] suboptimal to pola, which preserves all of the input features.
Figure 3.8 Structural Blending of por + la > pola

Tableau 3.6 por + la > pola

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<tr>
<th>/por + la/</th>
<th>*#l</th>
<th>*#fin</th>
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<th>CONTIG STEM</th>
<th>*PAL</th>
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Figure 3.9 Structural Simplification of por + la > *pora Disallowed
The realization of the contractions /de + la/ and /a + la/ in NPL as *dela* and *ala* is just as in PL, because, as in PL, the fully faithful forms do not incur any violation of **SYLCON**.

Finally, the realization of /la/ as *ela* in this dialect is due to the dominance of *PAL » DEP*.

**Conclusions and Open Questions**

In accounting for the preposition + article contractions attested in Medieval Leonese, this analysis shows a systematic relationship between morphology and phonology: The impetus from grammaticalization and markedness constraints to reduce the phonological form of short function words conflicts with the need for sufficient surface representation to ensure recoverability of meaning. This conflict is resolved by associating meaning not with individual segments but with individual features, a strategy that preserves sufficient phonological input to recover meaning despite the phonological shortening imposed by grammaticalization and markedness (figure 3.10).

If this solution resolved the tension between grammaticalization and preservation of meaning in Medieval Leonese, why did it not survive? Why didn’t the contracted forms of the prepositions become productive morphemes, combining with other word classes, such as bare nouns? As Tuten (2003) notes, speakers of various dialects of Spanish (including Leonese) began to settle in Castile in the ninth century. The variety of dialects resulted in a koine in which no contraction occurred and which later became the standard. Although the constraint rankings particular to other Medieval Spanish dialects have yet to be analyzed, Tuten (2003, 115–17) lists dialects in which little or no contraction occurred and suggests that these analytical

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**Tableau 3.7 la > ela**

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**Figure 3.10 Model of Phonological Compensation for Morphological Reduction**
and “transparent forms” were easiest for L1 speakers to acquire in this multidialectal setting. Due to the interference from competing dialects, it is impossible to tell how the Leonese morphological and phonological shortening would have progressed. Nonetheless, the data from the contraction of “small words” in Medieval Leonese provide insight into the relationship between the morpheme length and featural function.

NOTES
We owe thanks for comments and questions of substance, approach, and data to members of the audiences at GURT and at the 45th International Linguistic Association meeting (New York City, 2007), among them Loren Billings, Héctor Campos, Tom Cravens, Francisco Fernández Rubiera, Michael Ferreira, Gregory Guy, Regina Morin, Joel Rini, Donald Tuten, and José del Valle. The authors are responsible for any shortcomings of the present work.

1. Galician/Portuguese, Aragonese, and La Riojan show varying degrees of contraction. Leonese was selected for discussion because of its closer historical ties to Castilian, the national standard, being one of the strongest contributors to the medieval koine that emerged in Castile.

2. Interpretation of double nn and ll is somewhat problematic. Tuten is silent on what the double letter represents, and we interpret them as palatals. Menéndez-Pidal’s El dialecto leonés (1962) seems to support this, though direct, clear statements are lacking—when mentioned directly, he refers to assimilation (−n + l− > nn; −r−s se asimilan a la l− del artículo, o se pierde). Statements about ll seem clearer. For instance, there are data cited from Lena such as pagayos (pegarles), potcho (polo < por lo) (pp. 87–88; potchas also, as well as cometcho < comello < comerlo, p. 94, and dache < da-le < darle, p. 127; additional data cited throughout). The forms with palatal y or affricate tch plausibly and straightforwardly would result from the palatal lateral. For initial position, while palatalization of l− to ll− is abundantly attested, n− > nn− > ñ also occurs, ño, ñunca, and so on (Menéndez-Pidal 1962, p. 64, fn. 96; and Zamora Vicente 1967, 130–31).

3. We assume for all contractions the underlying form of la. Although it is reasonable to posit an underlying form of lla, given that this is the bare article form (table 3.1), such an analysis leaves unexplained its realization as la in contraction with de and a. We employ the feminine singular article as an exemplar throughout our analysis as all other article forms (with some minor exceptions for the masculine singular, ignored here) exhibit the same contraction patterns.

4. We assume that any identically valued feature in the input is sufficiently represented by a single occurrence in the output, perhaps as an instance of OCP-induced merger.

5. Bradley (2007) has pursued a similar line of argumentation in his gestural overlap account of Norwegian clusters, applying a Dispersion-Theoretic approach to coalescence of apicoalveolar 𝜓 with laminals 𝜏, s, n, l, which are realized as [t, s, n, l], where blending of adjacent tongue gestures obtains. In both this case and the case of coalescence-cum-palatalization in Leonese, recoverability is ensured, because, though distinct from underlying form, the surface form allows the listener to discern the features of the input segments; this is crucial for Leonese, as the input segments belong to different, and syntactic, morphemes.

6. We assume underlying form of dela. Although it is reasonable to posit an underlying form of /ela/, given that this is the bare article form (table 3.2), such an analysis leaves unexplained the absence of forms such as *conela, *porela, and so on.
9. We posit that the alternation between *ena* and *na* (table 3.2) is due to differing underlying forms of
the preposition *en*, /en/ and /n/, the latter of which represents a more advanced stage of the gram-
maticalization of the preposition *en*, as it occurs only as a bound form in these contractions.

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