Word Level Recursion in Spanish Compounds

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Introduction: One of the principles of Distributed Morphology (Halle and Marantz 1993, *et seq.*) is "syntax all the way down", meaning the atomic units of the syntax are morphemes rather than words. This poses a particular problem for the interface between the morphosyntax and phonology in that there is no morphosyntactic primative "word" to correspond to the notion of phonological word (ω-Word). This paper adopts the proposal of Shwayder (forth) that the basis for calculating ω-Words is the morphosyntactic structure M-Word, which is a (potentially complex) head not dominated by a further head projection (Embick and Noyer 2001). That is to say, M-Words in the linearized morphosyntactic structure are converted to ω-Words in the phonology (represented M-Word ⇒ ω-Word).

This paper presents a case study in the M-Word ⇒ ω-Word correspondence using data from apparent overapplication of ω-Level phonological processes in Spanish compounds.

Data: Two ω-Level processes in Spanish are diphthongization of mid vowels under stress (1) and epenthesis of *e-* to initial *sC* clusters (2). In (1), if stress does not fall on the mid vowel in question, diphthongization does not apply. In (2), if a (stem-level) prefix is attached, there is no need for epenthesis, thus it does not apply. In compounds, however, both diphthongization and epenthesis seem to "overapply" in that they apply in places that are not motivated by the surface phonology. In (3), the mid vowel of the first member of the compound is diphthongized despite not bearing surface stress. In (4), the second member of the compound gains an epenthetic *e-* despite the presence of the preceding vowel from the first member. It appears that both members of the compound have undergone ω-Level phonology separately before being joined together into the compound. In addition, the compound as a whole seems to have undergone a pass of ω-Level phonology as evinced by the presence of a single stress.

Analysis: These compounds are exocentric, meaning the category (and semantics) of the compound is not a subset of one of the members. In addition, the order of the elements in the compound is the same as they would be if they were a phrase. Given these observations, we propose that these compounds are built as a phrase in a separate workspace and then treated as a root in the workspace where the compound is being used (suggested by Harley 2009 based on the concept of renumeration from Johnson 2004). That is, for the sample derivation in (5), the structure of the phrase *cuelga capas* "hang capes" is built in one workspace. The contents of this workspace are linearized and the phonological groupings are calculated. Using the M-Word ⇒ ω-Word correspondence here, the two elements of the compound will be treated as separate words (as they would in the phrase). This phonological unit is then "renumerated", or treated as a root, and is inserted into a different workspace where it combines with another functional head (here a little *n*). When this tree is linearized and the phonological groupings are calculated, the compound and the *n* head are structurally an M-Word, and thus are grouped as a ω-Word by the phonology. The compound thus shows recursion of the ω-Word structure because the elements are treated as separate ω-Words in one workspace, renumerated, and then treated as a single ω-Word in the compound workspace.

Conclusion: This paper provides a unified analysis for why two different phonological processes overapply in exactly the same morphosyntactic situation. We propose that the initial morphosyntactic structure of the compounds seen in Spanish is the same as that of the phrasal syntax. This results in an M-Word structure, and thus ω-Level grouping, for each member of the compound separately. We propose furthermore that these phrasal units are "renumerated" into roots and merged into the syntactic structure in which the compound is used. This results in the entire compound having an M-Word (and thus ω-Word) structure. The recursion of ω-Word phonology can thus be attributed directly to a recursion of the morphosyntactic structure.

The morphosyntactic structures and the morphosyntax-phonology interface (the M-Word ⇒ ω-Word correspondence) should be universal, so this analysis predicts that the same recursive ω-Word structure will appear in the same sorts of compounds cross-linguistically.

(1) Spanish diphthongization under stress (Harris 1989)
- *c*[ué]*lga* "he/she hangs" (cf. *c*[o]*lgámos* "we hang")
- *c*[ié]*n* "100" (cf. *c*[e]*nténa* "group of 100")

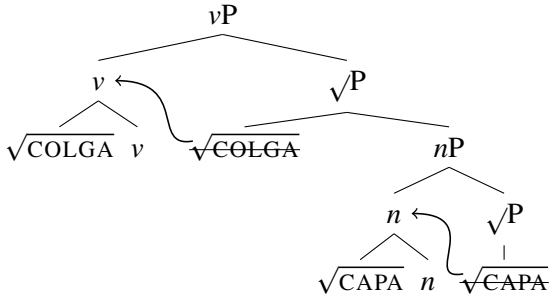
(2) Spanish *e-* epenthesis to initial *sC* clusters (Lema 1978; Harris 1987; Eddington 2001)
- *escribir* "write" (cf. *inscribir* "inscribe")
- *esfera* "sphere" (cf. *hemisferio* "hemisphere")
- *esmóquin* "smoking jacket" (loan word from Eng. *smoking*)

(3) Overapplication of diphthongization in compounds (Harris 1989)
- *c*[ue]*lgacápas* "coatrack" (**c*[o]*lgacápas*)
- *c*[ie]*mpiés* "centipede" (**c*[e]*mpiés*)

(4) Overapplication of epenthesis in compounds
- *guardaespaldas* "bodyguard" (**guardaspaldas*)
- *quitaesmalte* "nail-polish remover" (**quitasmalte*)

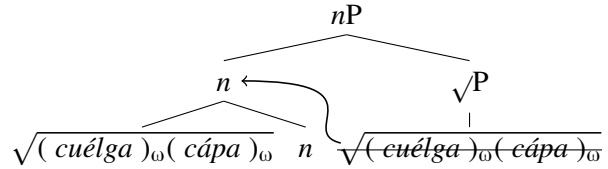
(5) Derivation of *cuelgacápas*[1]

Initial Phrasal Derivation:



Linearization: $[\ \sqrt{\text{COLGA}} \oplus v\ ]_{\text{M}} \frown [\ \sqrt{\text{CAPA}} \oplus n\ ]_{\text{M}}$
Phonological Grouping: (*colga* + ∅)$_\omega$ (*capa* + ∅)$_\omega$
ω-Level Phonology: (*cuélga*)$_\omega$(*cápa*)$_\omega$
Renumeration: $\sqrt{(\ \textit{cuélga}\ )_\omega(\ \textit{cápa}\ )_\omega}$

Use as a "root" in another tree:



Linearization: $[\ \sqrt{(\ \textit{cuélga}\ )_\omega(\ \textit{cápa}\ )_\omega} \oplus n\ ]_{\text{M}}$
Phonological Grouping: ((*cuélga*)$_\omega$(*cápa*)$_\omega$ + ∅)$_\omega$
ω-Level Phonology: (*cuelga cápa*)$_\omega$
Output: *cuelgacápa*

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[1] For the purposes of this derivation, the final *s* of this compounds will be ignored.