Prestressing the unstressable. Lowering the lowerable.
An account of prestressing suffixes in Catalan within Optimal Interleaving

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1. Prestressing suffixes in Catalan. In Catalan, the so called prestressing suffixes (hf PS suffixes) (*i.e. –i, –ic*, *–it*, *–id*, *–il*, *–im*, *–fil*, *–fon*, *–graf*, *–ul*, *–metre*) show some intriguing patterns (Mascaró 1976, 1985, 2002) that have not yet been resolved (Mascaró 2003): *a*) unlike the rest of the derivational suffixes, they are unstressed (cf. *carBÒn-ic* 'carbonic' *vs*. *carboN-ET* 'carbon *dim.*'); *b*) the stress is always placed in the syllable immediately preceding the PS suffix (cf. *cànon* 'canon' ~ *caNÒn-ic* 'canonical'); *c*) when the stem ends in a mid vowel (/e/ or /o/), this vowel is systematically low (*esf*[ɛ́]*r-ic* 'spherical', cf. *esf*[é]*r-a* 'sphera'; *carb*[ɔ́]*n-ic*, cf. *carb*[ó]). This vowel lowering effect is responsible not only for these vocalic alternations in stressed position, which in fact are unique in the Catalan phonology, but also for alternations such as *can*[ɔ́]*n-ic* ~ *càn*[o]*n*, involving words typically considered lexical exceptions with respect to vowel reduction, and *at*[ɔ́]*m-ic* ~ *àt*[u]*m*, involving words with regular vowel reduction. Interestingly enough, vowel lowering just affects PS suffixed words, as denominal inflected forms and other zero derivation forms, sharing the same stem, show: *num*[é]*r-a* 'number PI 3 P'(cf. *num*[ɛ́]*ric* 'numerical'), *introduct*[ó]*r-a* 'introducer *fem. sing.*' (cf. *introduct*[ɔ́]*ri* 'introductory'). These two discrepant patterns with respect to vowel lowering are indentified by Mascaró (2003) as problematic for the models that try to deal with DEE, such as CM (McCarthy 2002). This is why the author precludes a DEE-based analysis of these forms and suggests, following Fabra's observations, that what it is at play here is a constraint against high mid vowels in marked stressed words (such as paroxytones and proparoxytones).

2. New descriptive generalitzations and analytical proposal. In this paper we show that among these data it is possible to detect some consistencies which allow us to make a clear picture of how the analysis can be. *a*) Prestressing suffixes, unlike the rest of derivational affixes, behave as most inflectional affixes, as far as stress assignment is concerned (*esFEr-a*, *carBÒn-ic vs*. *carboNET*): both kinds of affixes are invisible to stress; *b*) but they behave differently as for vowel lowering (*carb*[ó]*n-s*, *esf*[é]*r-a*, *num*[é]*r-a* vs. *carb*[ɔ́]*n-ic*, *esf*[ɛ́]*r-ic*, *num*[ɛ́]*ric*). It seems, therefore, that stress assignment crucially precedes inflectional and PS derivation, whereas vowel lowering crucially precedes inflection and crucially follows PS derivation. In other words, vowel lowering is *blocked* in a non-derived environment (**carb*[ɔ́]*ns*), whereas regular stress assignment is *blocked* in a specific derived environment, *i.e.* that implying PS suffixes (**carboNIC*). These facts can be straightforwardly implemented within a model that alows the interaction between phonology and morphology, such as Optimal Interleaving (Wolf 2008). Due to space reasons, we spell out the analysis briefly and simplified (syllabification, for instance, is omitted).

2.1. ***Stress assignment.*** WTS is the markedness constraint responsible for stress assignment, which in Catalan is located in heavy syllables in a regular basis. Stress assignment occurs before the insertion of inflectional and PS derivational morphs, due to the the activity of the precedence constraints PREC[DEP(stress), INSERT(infl/PS)], according to which DEP(stress) has to be violated before INSERT(infl/PS). This rules out the chains *<carbon, carbon-ic, carboNIC> as well as *<esfer, esfer-a, esfera>, with "premature" morph insertion, in favor of

the chains <carbon, carBON, carBOn-ic> and <esfer, esFER, esFER-a>, with stress assignment prior to morph insertion.

2.2. *Vowel lowering.* The ranking *é, ó >> IDENT(ATR) ensures vowel lowering in cases such as *esfèric* and *carbònic*. Note how the ranking *é, ó >> IDENT(ATR) is also responsible to account for the selection of low mid vowels in stress position in other situations, such as most proparoxyton words and loanwords (*Am*[ɛ́]*rica*, *f*[ɛ́]*rry*, etc.). Vowel lowering, though, is blocked in the non-DE (*esfera*, *numeri*) due to the activity of the precedence constraint PREC[INSERT(PS), IDENT(ATR)], according to which INSERT(PS) must be violated before IDENT(ATR); this constraint rules out the chains *<esfer, esfer-a, esfɛra> and *<esfer, esfɛr, esfɛr-a>, and leads the chain <esfer, esfer-a>, with no violation of the precedence constraint, as the winner.

3. References

MASCARÓ, J. (1976): *Catalan phonology and the phonological cycle*. PhD dissertation, MIT.

MASCARÓ, J. (1985): Morfologia catalana. Barcelona: Enciclopèdia Catalana.

MASCARÓ, J. (2002) «El sistema vocàlic. Reducció vocàlica». In: Solà et al. (2002) *Gramàtica del català contemporani*. Barcelona: Empúries. pp. 89-123.

MASCARÓ, J. (2003): «Comparative markedness and derived environments». *Theoretical linguistics*, 29. pp. 113-122.

MCCARTHY, J. J. (2002): «Comparative markedness and derived environments». *Theoretical linguistics*, 29. pp. 1-51.

WOLF, M. (2008): *Optimal interleaving: serial phonology-morphology interaction in a constraint-based model*. University of Massachusetts, Amherst, PhD dissertation.