

Exploring implicational constraint rankings through Catalan loanword phonology

Clàudia Pons-Moll (Universitat de Barcelona)

Francesc Torres-Tamarit (Paris 8, CNRS)

1. Introduction and goals. Word-final posttonic *-n* deletion (ND) and vowel reduction (VR) are general processes in the native lexicon of Catalan (*pla* [pláns] ‘flat PL.’ ~ [pláØ] ‘flat SG.’; ~ [plənifiká] ‘to plan’; [bósə] ‘bag’ ~ [busétə] ‘bag DIM.’; Mascaró 1976, Bonet & Lloret 1998). These two processes, though, tend to underapply in loanwords (*diva*[n], *eur*[o]) (Cabré 2002). Interestingly enough, loans susceptible to undergo both processes show a consistent behavior across young speakers in which underapplication of both processes is the most common solution (PATTERN1: t[o]b[o]ga[n]), followed closely by just underapplication of ND (PATTERN2: t[u]b[u]ga[n]), followed by far by application of both processes (PATTERN3: t[u]b[u]ga[Ø]), and in which underapplication of VR and application of ND (PATTERN4: t[o]b[o]ga[Ø]) is unattested. The purpose of this talk is to both present the results of two surveys supporting quantitatively these patterns, and to attempt an analysis based on lexically indexed faithfulness constraints and implicational constraint rankings.

2. Experimental survey. A picture-naming production task containing 22 loans with the relevant structures was conducted on 25 Catalan speakers aged 18-23. The same 25 speakers were asked to answer a judgment test inquiring the naturalness of the four possible patterns (presented in an audio form) of the same 22 loanwords (22 x 4 patterns = 88 items), which had to be valued in a Likert scale of 1-5 (very unnatural, quite unnatural, natural enough, quite natural, very natural). Both tests were fulfilled with 50% of distractors and were presented in a randomized way. In the production test, loans were produced following PATTERN1 in a 65,2% of the cases, following PATTERN2 in a 25%, following PATTERN3 in a 9,8%, and following PATTERN4 in a 0%. In the judgment test, PATTERN1 was characterized as very natural in a 50,7% of the cases and as quite natural in a 17,5% (total of 68,2%), PATTERN2 was characterized as very natural in a 38,4% of the cases and as quite natural in a 23,5% (total of 61,9%), while PATTERN3 and PATTERN4 were characterized as very natural only in 13,1% and 11,7% of the cases, and as quite natural in a 14,8% and 16,3% (total of 27,9% for PATTERN3 and of 28% for PATTERN4); these two last patterns received a high score for the categories very and quite unnatural (total of 57,6% for PATTERN3 and 59% for PATTERN4). We attribute the low scores for PATTERN3, both in the production and in the judgment tests, to the age of the inquired speakers.

3. Descriptive generalizations. Taking the results of the production and the judgment tests together, we can conclude that *a*) underapplication of VR and of ND can co-occur (t[o]b[o]ga[n]), being the most common solution across young speakers; that *b*) application of VR and underapplication of ND can also co-occur (t[u]b[u]ga[n]), being a fair solution; that *c*) application of VR and of ND can also co-occur (t[u]b[u]ga[Ø]), although with lower scores, and that *d*) underapplication of VR and application of ND cannot co-occur (*t[o]b[o]ga[Ø]). The avoidance of this last logical outcome has to be understood as an impossible nativization in the phonology of Catalan (for impossible nativizations, see, among others, Itô & Mester 1999; Smith 2018; Smith & Pinta 2018). Departing from the fact that VR is a more productive process than ND (see Pons-Moll 2015 for arguments supporting this), the rationale beyond the depicted behavior is that if the less productive process (i.e. ND) applies, so does the most productive one (i.e. VR), or, in other words, if the more productive process (i.e. VR) is blocked so is the less productive one (i.e. ND).

4. Analytical proposal. In order to explain underapplication in loanwords we can make use of the lexically indexed faithfulness constraints **MAX-L** (against ND) and **IDENT(F)-L** (against VR) (Pater 2000, Pater 2006), associated to specific lexical items (i.e. loanwords which show underapplication of VR and ND in the grammar of certain speakers). **MAX-L** and **IDENT(F)-L** form a set of partially ordered constraints with respect to their respective markedness constraints: (1) **MAX-L**, *Vn##; (2) **IDENT(F)-L**, VR. From these partially ordered constraint rankings, different

outcomes are predicted. a) IDENT(F)-L >> VR >> IDENT(F): no VR (*eur*[o]); b) VR >> IDENT(F)-L, IDENT(F): VR (*eur*[u]); c) MAX-L >> *'Vn## >> MAX: no ND (*diva*[n]); d) *'Vn## >> MAX-L, MAX: ND (*diva*[∅]). Note, however, that if IDENT(F)-L dominates VR, but *'Vn## dominates MAX-L, the unattested candidate *[o]r[a]nguta[∅] is selected. In order to discard this kind of outcome, we propose a version of the lexically indexed constraint ranking approach in which if an item is lexically specified with L (i.e. /tobogan/-L) (leading to the ranking schema IDENT(F)-L >> VR), a metaconstraint of the type $F \gg M_{(+structural)} \Rightarrow F \gg M_{(-structural)}$ [where structural refers to the productivity of the process expressed by the markedness constraint] (see Itô & Mester 1999), operating as a control component of the constraint ranking, requires and triggers the same ranking schema with respect to MAX (i.e. MAX >> *'Vn##). According to our approach, therefore, there are just two types of lexical specifications: loans specified with L (/divan/-L/, which show underapplication of ND), loans specified with L (/ewro/-L/; /tobogan/-L/, which show underapplication of VR and also of ND, given the transitivity action of the metaconstraint. There is no need, therefore, to double specify loanwords susceptible to undergo both processes (i.e. */tobogan-LL/). What we are proposing, thus, is an elastic grammar, conditioned by transitivity relations between F >> M ranking schemas.

5. Further issues. In order to support our proposal with additional typological evidence, we are going to explore similar implicational and impossible nativization effects in the phonology of Catalan (such as those established between VR and *-r* final deletion, or between vowel-final VR and the opening of stressed vowels; see Cabré 2002; Pons-Moll 2015: 90), and in the phonology of other languages (see Itô & Mester 1999 for Japanese, or Smith 2018 and Smith & Pinta 2018 for Guaraní). We are also going to show how alternative analyses based on a stratified lexicon (Itô & Mester 1999, Smith 2018; Smith & Pinta 2018), on local conjunction (Smolensky 1995), or on metaconstraints pivoting on markedness, are not feasible or just rather stipulative. Finally we are going to attempt a parallel formalization of the same facts under the Weighted Scalar Constraints version of Harmonic Grammar, following the recent proposals by Hsu & Jesney (2017a, b), and we are going to show that this modelization can also straightforwardly account for the patterns under structinity.

Fig. 1. Production test

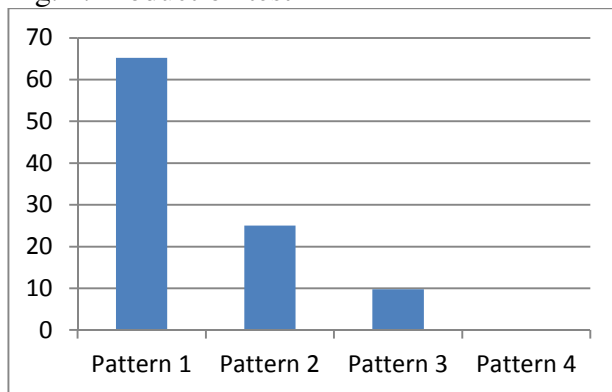


Fig. 2-4. Judgment test

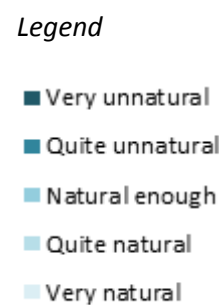


Fig. 2. Pattern 1

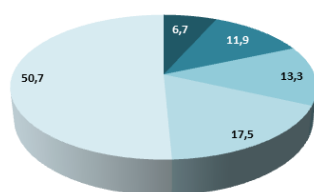


Fig. 3. Pattern 2

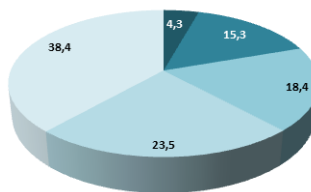


Fig. 4. Pattern 3

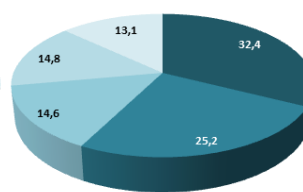


Fig. 4. Pattern 4

