Markedness vs. frequency as factors in base selection: English Latinate derivatives

Juliet Stanton, NYU (stanton@nyu.edu), Donca Steriade, MIT (steriade@mit.edu)

I. Introduction

- In typical cyclic patterns (Chomsky, Halle, Lukoff 1956), a Derivative (D) resembles its immediate constituent, or **Local Base** (B_L). Example: stress of *solìdific-átion* matches the stress of B_L *solídify*, not the stress of *sólid* (**sòlidìfícátion*).
- We analyze deviations from the typical pattern: Ds that resemble related forms distinct from B_L, or **Remote Bases** (B_Rs). Example: stress in *humídify* (B_L *húmid*) matches B_R *humídity*, not the stress of B_L *húmid* (**húmidify*).
- Outline of proposal (Steriade 2008, Steriade and Yanovich 2015, Stanton and Steriade 2018; cf. related in Burzio 1997; Raffelsiefen 2004, Steriade 1999): correspondence between D and a B_R arises whenever M constraints outrank a preference for correspondence to the B_L.
- Some components of this proposal:
  - **Multiple Bases**: D's stem – in particular, its root allomorph – can correspond to *one of several* related forms.
  - **A violable Base preference**, CORRB_L: the stem of D corresponds to D's B_L
  - **A ranking:** When M >> CORRB_L, stem of D may correspond to one of D's B_R's, not the B_L.
- We present evidence for this proposal from a subset of the Latinate (Level 1) English Derivatives (Stanton & Steriade 2018).
- Beyond English: Romanian (Steriade 2008), East Slavic (Steriade &Yanovich 2015), Indonesian (Stanton&Steriade 2018).
- We consider and reject an alternative account of the English data (Collie 2008, Dabouis 2017) which attributes the choice-of-base effects to frequency differences between D and B_L or between B_L and B_R.

II. The proposal, as applied to English

- Analysis of CORR B_L-violating patterns like that of *humídify* requires three interacting constraint families.
  - *Base-Derivative (BD) Faithfulness constraints:* they require a D to resemble its B (Benua 1997, others).
    BD-IDENT(stress): assign a * for each syllable in the D that differs in stress from its correspondent in the B.
  - *Accentual Markedness constraints*, including the two below: they disprefer certain stress patterns.
    *LAPSE: assign a * for each sequence of two consecutive stressless syllables.
    *CLASH: assign a * for each sequence of two consecutive stressed syllables. (See Prince 1983, Gordon 2002 on foot-free approaches to stress.)
  - *Base preference constraints:* they require D to correspond to a certain kind of B, defined in morpho-syntactic terms. In the present case, this B is the B_L.
    CORR B_L: assign a * if a D stands in correspondence with some Base ≠ B_L.
- Simplifying, we argue that the following ranking holds within the English Latinate lexicon:

BD Faith >> Accentual Markedness >> Base Preference

Latinate Ds are generally faithful to their Bs, even at the expense of Markedness; e.g. házardous *(from* házard*, WSP violation);* résinify *(from* résin*, *LAPSE violation.);* expèllée *(B_L* expél*, *CLASH violation);* jéttisonable *(B_L* jéttison*, *EXTLAPSE violation), a.o.*

Latinate Ds correspond to a B_R instead of B_L if the B_R's stress is M-improving, i.e. allows the D to optimize accentual Markedness more than the stress of B_L. E.g. pèrmutée, B_R pèrmutátion, B_L permúte.

- Tableaux for *humídify* and *résinify*. Correspondence indicated with subscripts, L or R.

humid+ify B_L: húmid B_R: humídity	BD-IDENT (stress)	*LAPSE *CLASH	CORR B_L
a. húmid$_L$-ify		*$_{LAPSE}$!	
b. humíd$_L$-ify	*!*		
☞ c. humíd$_R$-ify			*

resin+ify B_L: résin B_R: –	BD-IDENT (stress)	*LAPSE *CLASH	CORR B_L
☞ a. résin$_L$-ify		*$_{LAPSE}$	
b. resín$_L$-ify	*!*		
c. rèsín$_L$-ify	*!	*$_{CLASH}$	

Questions addressed in the full analysis

- **Q1**: Ds in *–al, -ity, -ian, -ation,* change stress without a B_R. Why?
  A: Some *affix-indexed M* constraints outrank BD-IDENT. E.g. *EXTLAPSE{ity, al,...} >> BD-IDENT (stress) yields *humíd-ity*
- **Q2**: Why no B_R effects in Germanic (Level 2) derivatives? E.g., *rémedy-ish*, **remédy-ish* (cf. *rémedy*, *remédial, remédiable*)
  A: The M constraints governing Germanic Ds are lower-ranked.

BD-IDENT >> $M_{Latinate}$ >> CORRB_L >> general M >> IO-IDENT

Latinate **Germanic** **Monomorphemes**

- **Q3**: How do I know *humídity* is a B_R for *humídify* and not viceversa? In general, how are Base Priority effects (Benua 1997) modeled? What predicts B-D asymmetry, if not syntactic structure?
  A: B-D asymmetries arise in related phenomena (incl. Paradigm Uniformity and Contrast: Albright 2005, Kenstowicz 2005) where Bs are not contained syntactically in Ds. Some options for analysis are discussed in Albright 2011, Hay 2000.

III. Broader evidence

- **Prediction:** there should be entire classes of Ds where satisfaction of M correlates with the presence of a better B_R.
- To check this, we extracted derivatives from the OED using all Latinate suffixes listed by Marchand (1969). For each resulting derivative, we recorded the following information. Two case studies below illustrate our analysis's success.
  - The D itself, its B_L, possible B_Rs; spelling, IPA, stress, OED frequency bin
  - Stress change between B_L and D's stem; which M constraint is satisfied in D by the change.
  - Is there a B_R that's accentually better than the B_L? (= is there a B, != B_L, such that if D is faithful to B, it has fewer M violations?)
  - Is this better B_R actually used? (= is D's actual stem more similar in stress to B_R, not B_L?)

*LAPSE in *–ify*

- 38 Ds that should violate *LAPSE if faithful to the B_L.
- Relevant *–ify* bases are trochee-final (e.g. *rígid*, *húmid*, *tútor*).
- *–ify* Ds with a better B_R more likely to resolve *LAPSE ($p < .001$).

	Better B_R	No Better B_R
*LAPSE satisfied (stress shift wrt B_L)	**31**, e.g. rigíd-ify (B_L rígid; B_R rigídity)	–
*LAPSE violated (stress same as B_L)	**2**, e.g. tútor-ify (B_L tútor, B_R tutórial)	**5**, e.g. résin-ify (B_L résin, no B_R)

*CLASH in *–ee*

- 101 Ds that should violate *CLASH if faithful to the B_L.
- Relevant –ee bases are iamb-final (e.g. *provóke*, *submít*).
- *–ee* Ds with a better B_R more likely to resolve *CLASH ($p < .001$).

	Better B_R	No Better B_R
*CLASH satisfied (stress shift wrt B_L)	**12**, e.g. òrdin-ée (B_L ordáin, B_R òrdinátion)	**1**, sùbmitt-ée (B_L submít, no B_R)
*CLASH violated (stress same as B_L)	**13**, e.g. provòk-ée (B_L provóke, B_R pròvocation)	**75**, e.g. adòpt-ée (B_L adópt, no B_R)

- Beyond these, evidence for B_Rs from: *–able*, *–ary*, *–ory*, *–ive*, *–ician*, *–ivity*, *–icity*, *–ism*, *–ite*, *–oid*, root compounds.
- Other Latinate affixes: data is sparse, or there are strict conditions on stress placement requiring shift in all cases.

IV. Against a frequency-based alternative

- An alternative: frequency-based factors decide whether or not a D resemble its B (Collie 2008, Dabouis 2017; cf. Hay 2003,).
  - *D frequency:* a frequent form might optimize its stress regardless of its B's stress.
  - *Relative frequency of B_L and D:* the more frequent the B_L relative to the D, the more likely the D is to resemble it.
  - *Frequency of B_R and B_L:* if some B_R is more frequent than the B_L, the D is more likely to resemble that B_R).
- Statistical evidence from nine suffix types shows that the above factors do not subsume the effect of a better B_R.
  - *Data:* wordlists from nine suffix types, including only those Ds that would violate some M constraint if fully faithful to their BLs. (Example: we considered *expellee* with B_L *expél*, but not *surrenderree* with B_L *surrénder*.)
  - *Models:* logistic regressions; dependent variable = does the D matches its B_L? Each D coded for the following:

Predictor	Explanation
Better B_R	If the D has a B_R whose stress is optimizing, assign a 1; else assign a 0.
Frequent B_R	If the D has a B_R more frequent than the B_L, assign a 1; else assign a 0.
$Freq_D$	Frequency of the D; value of 0-8, from OED's frequency bins.
$Freq_{BL}$-$Freq_D$	Frequency of the D subtracted from frequency of the BL; from OED's frequency bins.

  - *Result:* Better B_R is always significant. Other predictors do not have consistent effects.

Suffix type (# of forms)	Better B_R	$Freq_D$	$Freq_{BL}$-$Freq_D$	Frequent B_R
	If a Better B_R is present,	As $Freq_D$ grows,	As $FreqB_L$ increases relative to FreqD,	If some B_R is more frequent than the B_L,
–able **(n=397)**	Match less likely ($p < .01$)	Match less likely ($p = .08$)	Match less likely ($p < .05$)	Match less likely ($p = .09$)
–ee **(n=109)**	Match less likely ($p < .001$)	Match less likely ($p < .05$)	No effect ($p > .1$)	No effect ($p > .1$)
–ician **(n=55)**	Match less likely ($p < .01$)	No effect ($p > .1$)	No effect ($p > .1$)	No effect ($p > .1$)
–icity **(n=65)**	Match less likely ($p < .05$)	No effect ($p > .1$)	No effect ($p > .1$)	No effect ($p > .1$)
–ify **(n=40)**	Match less likely ($p < .01$)	No effect ($p > .1$)	No effect ($p > .1$)	No effect ($p > .1$)
–ive **(n=449)**	Match less likely ($p < .001$)	No effect ($p > .1$)	Match more likely ($p = .06$)	No effect ($p > .1$)
–ivity **(n=65)**	Match less likely ($p < .05$)	No effect ($p > .1$)	No effect ($p > .1$)	No effect ($p > .1$)
–oid **(n=113)**	Match less likely ($p < .001$)	No effect ($p > .1$)	No effect ($p > .1$)	No effect ($p > .1$)
–ory **(n=207)**	Match less likely ($p < .001$)	Match less likely ($p < .01$)	No effect ($p > .1$)	No effect ($p > .1$)

- Our proposal: interactions between M and CORR B_L determine the choice of Base, in a grammar where M >> CORR B_L.
- The alternative: a system in which frequency alone dictates which forms influence which others.
- **Our proposal is supported by evidence from all relevant classes of Latinate affixes.** The alternative is not.