

When Stress Preservation Leads to Clash

Cases of exceptional stress preservation in English (e.g. *depàrtment* > *depàrtméntal*) have been previously noted in the literature. The exceptionality of such cases lies in the presence of a stress clash which can be attributed to stress preservation as this pattern never occurs in simplex words, and the normal pattern for derivatives is one which avoids stress clashes, even in violation of stress preservation (e.g. *provóke* > *pròvocátion*). These cases are sometimes mentioned as having heavy second syllables and as constituting a strong argument in favour of cyclic stress preservation (Collie, 2007: 79; Hammond, 1999: 329; Kager, 1989: 171) but, to the best of our knowledge, no explanation for this exceptional pattern has ever been proposed. Therefore, this study aims at evaluating the parameters which can account for this exceptional stress preservation through the examination of a corpus of 131 derivatives in *-al*, *-ity*, *-(at)ion*, *-ian* and *-ee* with primary stress on the third syllable and whose bases have primary stress on their second syllable, taken from Wells (2008). Among these words, 25 (19%) may show this exceptional stress pattern, and are grouped together in Group 1. The remaining 106 words are strictly non-stress-preserving, and constitute Group 2. Three parameters are investigated: relative token frequency, suffix-specific idiosyncrasies and the structure of the second syllable.

Relative token frequency has been shown to influence stress preservation in English suffixal derivatives (Collie, 2007, 2008; Kraska-Szlenk, 2007) but, as far as we know, this parameter has never been tested in this environment. We follow Collie in adopting Hay's (2001) dual-route race model of lexical access to account for the relative frequency effect. This model states that lexical access for complex words can be modelled as a dual route race between two routes: a direct route and a decomposed route. The more often a route is activated, the faster lexical access through this route is. Therefore, the model makes the prediction that if a base is more frequent than its corresponding derivative, then the decomposed route will be the fastest, and preservation effects will be more likely to occur. We also based our study on work by Hay & Baayen (2002), who have established a parsing line (using psycholinguistic model for morphological parsing) above which the decomposed route is more likely to be the fastest. We collected token frequencies from the *British National Corpus* for all derivatives and their base(s) and conducted two statistical tests to establish whether relative token frequency was a significant predictor of exceptional stress preservation.

The first test only takes into account the frequency of the immediately embedded base and evaluates the difference in relative frequency between Groups 1 and 2. We found that there was a significant difference between the two groups (Wilcoxon test, $W = 1684.5$, $p < 0.04$). We also found that 48% of the items of Group 1 were above Hay & Baayen's parsing line, whereas only 19% of the items of Group 2 were above that line. This first test indicates that relative token frequency may indeed account for this exceptional preservation pattern.

In the second test, we reproduced the first test but instead of taking into account the frequency of the immediately embedded base, we took into account the frequency of the most frequent of the two bases, provided that the more deeply embedded base has the same stress pattern as the immediate base. The results were even more significant than in the first test, with $W = 1994$ and $p < 0.0005$. The number of items above Hay & Baayen's parsing line are 72% for Group 1 and 20% for Group 2. Therefore, we can conclude from these two tests that relative token frequency is a significant predictor of this pattern of exceptional stress preservation.

The second parameter investigated is the potential existence of **suffix-specific idiosyncrasies** which could forbid stress-preservation in this configuration. The distribution between the two groups per suffix is shown in the following table:

	<i>-ity</i>	<i>-ian</i>	<i>-al</i>	<i>-ee</i>	<i>-(at)ion</i>	Total
Group 1	10	1	4	9	1	25
Group 2	7	1	9	9	80	106
Total	17	2	13	18	81	131

We can see that the different suffixes do not behave identically with regard to stress-preservation and, most notably, *-(at)ion* seems to forbid it. Interestingly, we also found that *-(at)ion* had the lowest proportion of items below Hay & Baayen's parsing line, which could account for the low number of stress-preserving derivatives.

The link between **syllable structure** and stress placement in English has been made countless times since Chomsky & Halle (1968), as heavy syllables are usually thought to carry some degree of stress. Additionally, the place of articulation of the coda consonant has been shown to influence the reduction of the preceding vowel (Burzio 1994; 2007, Dahak 2011). Consequently, we evaluated whether the structure of the second syllable could help account for exceptional stress preservation. Two results stand out of this part of the study: non-coronal obstruents in coda position strongly favour stress preservation and open syllables tend to favour non-preservation.

Therefore, the parameters evaluated in this paper account, to various degrees, for this exceptional pattern. However, a formal account of this phenomenon remains to be proposed as, as opposed to Collie's work, the relative frequency effect cannot be reduced simply to presence vs. absence of the base in the input.

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