Speakers' sensitivity to the markedness of unattested onsets

Are speakers sensitive to the grammatical markedness of structures that are unattested in their lexicon? To address this question, we examine the correspondence between phonological universals involving the sonority profile of onset clusters and the phonotactic preferences of individual speakers. It is widely believed that onsets with large sonority rises are unmarked compared to those with smaller rises, smaller rises are unmarked relative to plateaus, and plateaus are unmarked relative to sonority falls (e.g., *bl>bn>bd>lb,* cf. Clements 1990*).* However, the evidence supporting the sonority hierarchy is limited. To seek typological evidence for the sonority hierarchy, we reanalyze data from Greenberg's (1978)'s survey. The findings reflect statistically significant dependencies between the presence of marked and unmarked sonority profiles, such that languages with a marked sonority profile tend to exhibit less marked profiles.

We next examined whether the entire hierarchy of onset types (e.g., *bl>bn>bd>lb*) is available to speakers of English--a language that manifests *bl*-type onsets, but offers little lexical evidence to differentiate the other, unattested, onset types. Speakers' markedness preferences were inferred from the susceptibility of clusters to perceptual repair. English is known to repair illicit onsets by epenthesis (e.g.,Davidson, 2006). Of interest is whether the use of repair is sensitive to markedness. If English speakers are equipped with markedness preferences regarding unattested clusters (e.g., *bn>bd>lb)*, and if markedness triggers repair, then clusters that are universally marked should be more likely to elicit repair (e.g., *lbif* → *lebif)*. Consequently, marked monosyllabic targets should be misperceived as disyllabic.

The results of several experiments are consistent with the repair hypothesis. In an on-line syllable judgment task, participants were presented with auditory targets, recorded by a Russian speaker (Russian speakers can produce these types of clusters naturally since they are attested in their language). The targets were monosyllabic nonwords (e.g., *bnif, bdif, lbif*) mixed with their disyllabic counterparts (e.g., *benif, bedif, lebif*). English-speaking participants were asked to determine whether the target has one syllable or two. The key finding concerns monosyllabic targets: Response accuracy decreased monotonically and significantly with the markedness of the cluster (i.e., % correct *bnif>bdif>lbif*). On the majority of the trials (85%), highly marked clusters (e.g., *lbif*) were misperceived as disyllabic. In a second experiment, participants were presented with pairs of auditory words, either identical (e.g., *lbif-lbif*) or epenthetically related (e.g., *lbif-lebif*), and asked to determine whether the words were identical. As the markedness of the cluster increased, people were more likely to misjudge a monosyllabic target (e.g., *lbif*) as identical to its epenthetical counterpart (e.g., *lebif*). Two additional experiments showed that the misperceptions of English speakers reflect their linguistic knowledge, rather than stimulus artifacts, as Russian speakers were able to perceive these stimuli accurately. Further analyses suggest that the misperceptions of English speakers are irreducible to an inability to encode the phonetic form of such clusters or to various statistical measures of segment-co-occurrence in the English lexicon. Our present results do not directly demonstrate that people constrain sonority profiles, nor can they falsify all statistical accounts--we discuss how such questions can be addressed in future research. Nonetheless, the systematic perceptual illusions of universally-dispreferred onsets are consistent with the hypothesis that English speakers represent the grammatical markedness of onsets that are unattested in their lexicon.

References

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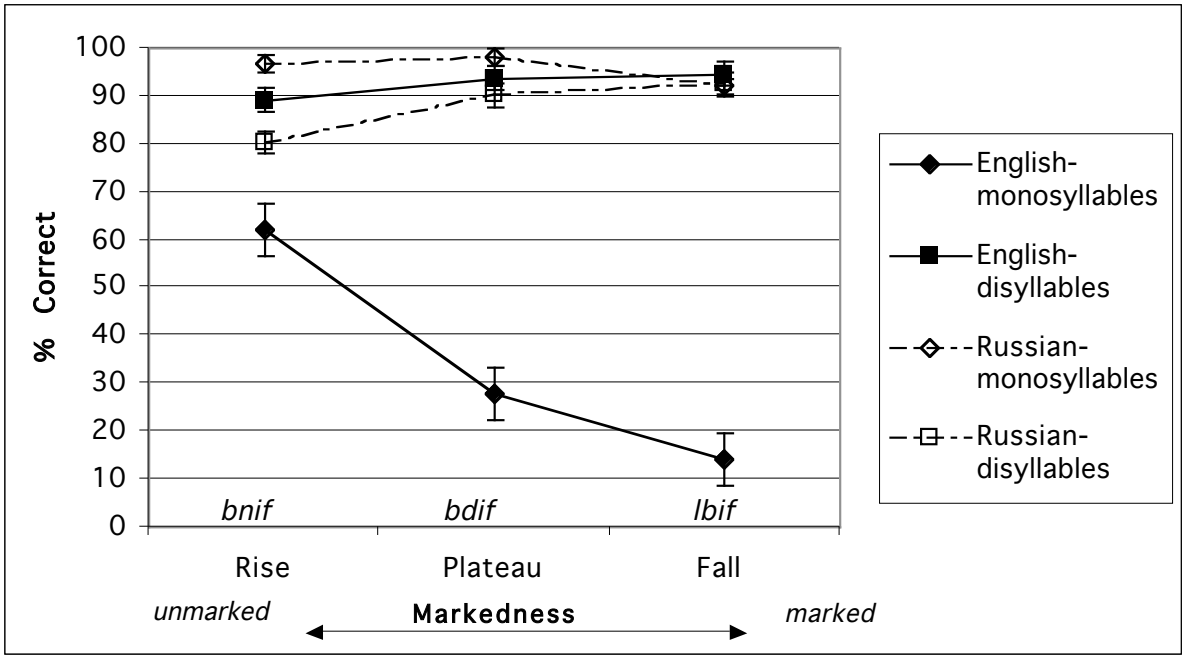

Figure 1. Syllable judgment accuracy of English and Russian speakers