Two Phonologies

Claim. Phonological computation is held to be the set of operations that transforms lexical representations stored in long term memory and assembled by morpho-syntax into surface realizations that constitute the input to phonetic processing. Following work by Gouskova & Becker (2016) and Rasin (2016), we argue that this production scenario needs to be augmented by a different computational system that manages and creates lexical representations when speakers integrate new words in their lexicon (in L1 acquisition or at adult age). That is, lexical representations must somehow come into being by a process that transforms the continuous auditory signal into a discrete symbolic representation which obeys lexical constraints. This process is distinct from regular perception, which occurs on the fly in communication and contributes to morpheme recognition: lexicalization creates lexical items, while regular perception does not. We contend that regular perception phonology uses both lexicalization and production phonology.

We argue that lexicalization phonology and production phonology are distinct computational systems: they do not work on the same input (auditory signal upon lexicalization, symbolic vocabulary in production), they do not impose the same restrictions (to be illustrated below) and they perform (partially) different types of operations that do not occur in the other system (e.g. inventory-related adaptations upon lexicalization, association line-management and sandhi processes upon production).

Syllabification. Government Phonology (GP; Kaye et al. 1990) offers several arguments to the effect that syllable structure is fully recorded in the lexicon. GP does not talk about the question of how syllable structure gets there, though: it is not contained in the acoustic signal. Hence it is not the case that there is no syllabification algorithm in GP – rather, syllabification occurs upon lexicalization. That the two phonologies – one building syllable structure, the other using it – are separate may be illustrated by a case from Modern Hebrew where [e] syncopates unless the result would be a triconsonantal cluster: [kit**e**r, kitr-u] 'he/they ranted' [kint**e**r, kint**e**r-u] 'he/they taunted', and not *[ki**ntr**u], which would involve resyllabifying two separate consonants into a branching onset. This being said, denominal verbs in Modern Hebrew can be created by "squeezing" the consonants of the base into a two-vowel stem, e.g. [katalog] 'catalogue' becomes /kitleg/ 'he catalogued' upon nativization. Crucially, this word formation process *can* create the same clusters that the production grammar refuses to create from two originally separate consonants: [χantariʃ] 'charlatan' => /χi**ntr**eʃ/ 'he talked nonsense'. This makes sense if creating a new verb is a matter of lexicalization that obeys its own well-formedness conditions, whereas syncope is a matter of production phonology where (re)syllabification is not performed.

MSC. The lexicalization phonology is the locus of what was called Morpheme Structure Constraints (MSCs) in SPE, i.e. restrictions that are imposed on what is storable. Although MSCs have been rejected because of the 'Duplication Problem' (they duplicate active rules in the production grammar), they can be shown to be necessary in a number of cases. For example, Ancient Greek does not allow aspiration features to co-occur within a morpheme (Jatteau 2016). This generalization is however not surface-true: it is violated when independent constraints require a [spread glottis] feature in a given position, as in root-initial *r*: [r^{h}ut^{h}mos] 'rhythm'. We show that this problem can be solved if the co-occurrence constraint is part of the lexicalization grammar, rather than the production grammar.

ROTB. If, as we suggest, perceived inputs are restated upon lexicalization in terms of what a possible lexical entry is in the language, there are many configurations that never reach production phonology because they are filtered out upon lexicalization. This view therefore undermines Richness of the Base. We illustrate this point by reexamining McCarthy's (2005) analysis of final vowels in Arabic dialects, showing that the ban on final short vowels is more insightfully accounted for in lexicalization than in production.