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Syllabic Markedness, Segmental Markedness, Rhythm and Acquisition

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Two seldom-disputed typological universals are that (a) all languages allow syllables with onsets, and (b) all languages allow syllables without codas. As all languages have CV syllables, it is assumed to be the maximally unmarked syllable. In Optimality Theory this is expressed by the Markedness constraints ONSET and NOCODA. Both constraints are relatively independent of each other. There is also a long tradition of relating typological markedness with language acquisition (cf. Jakobson 1941/1968, Chomsky & Halle 1968): what is common in languages of the world is acquired early. Therefore, the prediction is that children start producing only CV syllables, before producing either onsetless syllables or syllables with codas (cf. Fikkert 1994, Levelt et al 1999/2000). The next step in development would be either the production of onsetless syllables (V), demoting ONSET, or syllables with coda (CVC), demoting NOCODA, but crucially not VC, which would involve demotion of both markedness constraints.

Our detailed investigation of acquisition data from a number of different languages shows that (a) from the earliest stage onsetless syllables are observed in French and European Portuguese child data (Wauquier-Gravelines 2003, Freitas 1997), while (b) in English and Dutch onsetless syllables appear later, although still relatively early. Moreover, Dutch and English children's 'errors' go in the unmarked direction: target onsetless syllables are often produced with an onset. This suggests that while ONSET may be demoted before word production in French and Portuguese, this is not the case in Dutch and English. In the latter languages NOCODA is usually demoted before ONSET. Furthermore, syllables with codas are present early in Germanic languages, but appear later in French and Portuguese.

To account for this pertinent difference between Romance and Germanic languages we follow the proposal of Frota, Vigário & Freitas (2003) who suggest that rhythm helps the bootstrapping of syllable structure constraints. Germanic and Romance languages differ in basic rhythmic structure (cf. Ramus, Nespor & Mehler 1999): Germanic languages are stress-timed, with often just one full vowel per word, and a complex syllable structure. Hence, consonants may play a more prominent role than vowels, also in acquisition. French and Portuguese are syllable-timed languages, with a relative simple syllable structure. Here, vowels are more prominent than in Germanic languages, also in acquisition. This is why the constraint ONSET (referring to consonants) remains high-ranked for some time for Dutch and English children, but is demoted at early stages of acquisition in syllable-timed languages. It also explains why NOCODA is demoted earlier for Germanic than for Romance languages.

However, rhythm does not account for all attested differences. Zooming in on errors concerning onsets, we see that all children ban fricatives from onset position, but they may employ different repair strategies: In early Dutch, English and German, fricatives in onset position are often replaced by plosives. In later stages they are deleted, rather than replaced. In Romance languages, deletion is favored over replacement. Clearly, there is no need for a constraints *ONSET, as onsets are never deleted across-the-board. Rather, ONSET interacts with segmental constraints like *FRICATIVE. As soon as ONSET has been demoted, high-ranked *FRICATIVE can lead to deletion, often resulting in more marked VC syllables (Fikkert 1994, Grijzenhout & Joppen 2002).

Our investigations makes clear that at least two factors are important in understanding the different developmental patterns: (a) differences in rhythmic structure may cue the child to focus on either vocalic or consonantal structure, and (b) segmental markedness may interfere with prosodic markedness. It is therefore important to consider characteristics of the language system as a whole and not just a particular subdomain, such as the acquisition of onsets. Only in depth comparative research can provide insight into these factors, as we show in this paper.

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