

Markedness and Learnability in the Acquisition of Word-final Consonants

In this paper, I address the question of how learners syllabify word-final consonants in early outputs. Piggott (1999) posits two possibilities in adult languages: codas and onsets (cf. Kaye 1990). In the Selayarese type (Mithun & Basri 1986), which allows only place-sharing and placeless consonants ([N, ʔ]) in both word-internal codas and word-final position, word-final consonants are syllabified as codas. In the Diola Fogy type (Sapir 1965), which restricts word-internal codas to homorganic sonorants but has no restriction on place specification word-finally, word-final consonants are syllabified as onsets. Addressing the learnability issue, Piggott suggests that word-final onsets are unmarked and thus represent the first option entertained by the learner. In the field of child language, Goad & Brannen (2000) provide support to Piggott's proposal: based on phonetic evidence, they demonstrate that children initially syllabify word-final consonants as onsets, independently of the syllabification constraints of the target language.

However, assuming that children rely on positive evidence to acquire the marked properties of their language (Chomsky 1981), this proposal cannot account for how the learner of Selayarese, starting with unmarked word-final onsets, can attain the final-coda syllabification, deemed marked by both Piggott and Goad & Brannen. Indeed, only negative evidence from the distribution of placeless consonants provided above enables us to determine the adult word-final consonant syllabification in Selayarese, a language with a fixed (penultimate) stress system in which codas do not contribute weight (Mithun & Basri 1986: 235).

Focusing on this issue, I argue that place feature specification plays a role in the acquisition of unmarked word-final consonant syllabification. As stated in (1), I propose that, in the unmarked case, while word-final *placeless* consonants are syllabified as codas, word-final *place-specified* consonants are syllabified as onsets.

- (1) Proposal: unmarked options in word-final consonant syllabification
- a) Word-final placeless consonant: coda (parallel to Selayarese)
 - b) Word-final place-specified consonant: onset (parallel to Diola Fogy)

This proposal is supported by data on the development of the French rhotic [ʀ]. Rhotics are argued to be placeless in a number of languages, independently of how they are articulated (e.g. Mester & Itô 1989, Rice 1992, Rose 1997). This generalization also applies to French (Béland, Paradis & Bois 1993), the target language of the two children under investigation, Clara and Théo (original data).

Looking first at segmental representations, I demonstrate that while Clara's [ʀ] is placeless, in (2a), Théo's [ʀ] is specified for the feature Dorsal, in (2b). The variability between the two children is attributed to the misleading uvularity of the target French consonant.

(2)

a) Clara's [ʀ] Root	b) Théo's [ʀ] Root Place Dorsal
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The children's respective representations in (2) are supported by systematic assimilation patterns found in their outputs. In (3a), Clara's [ʀ] undergoes assimilation in singleton onsets, taking on the place of articulation of any other consonant in the word. In branching onsets, (3b), [ʀ] surfaces as target-like. Conversely, while Théo's [ʀ] is realized as target-like in singleton onsets, in (4a), it triggers regressive Dorsal assimilation in Coronal-initial branching onsets, in (4b).

(3)

a) Clara's [ʀ] in singleton onsets <i>carotte</i> [kaʀɔt] → [ka'qɜ] 1;07.27 <i>robe</i> [ʀɔb] → [wɔb] 1;10.10	b) Clara's [ʀ] in branching onsets: target-like <i>biberon</i> [bibʀɔ̃] ^a → [pa'pʁɔ̃] 1;09.29 <i>citrouille</i> [sitʁuj] → [θə'tʁuj] 1;10.04
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a. /ʀ/ is realized as voiceless [χ] when preceded by voiceless obstruents in branching onsets. The children's outputs generally conform to this pattern.

(4) a) Théo's [ʁ] in singleton onsets	b) Théo's Cor-[ʁ] onsets: Dorsal assimilation
<i>oreille</i> [ɔʁɛj] → [ɑ'ʁɛj] 2;06.12	<i>train</i> [tʁɛ̃] → [kʁɛ] 2;06.12
<i>bureau</i> [byʁo] → [bo'ʁo] 2;08.22	<i>drôle</i> [dʁol] → [gʁol] 3;04.19

According to (1), in word-final position, Clara's placeless [ʁ] must be syllabified as a coda while Théo's Dorsal-bearing [ʁ] must be syllabified as an onset. This prediction is borne out by the data. Focusing first on Clara, at age 1;07.27, when other word-final consonants are mastered by the child, word-final [ʁ] undergoes deletion with compensatory vowel lengthening, as shown in (5). As exemplified in (6), Clara's mastery of word-final [ʁ] occurs several months later, and coincides exactly with her mastery of word-internal codas.

(5) a) Clara's mastery of final Cs (save [ʁ])	b) Word-final [ʁ]: deletion and V lengthening
<i>bol</i> [bɔl] → [pɔl] 1;07.27	<i>canard</i> [kanɑʁ] → [næ'næ:] 1;07.27
<i>bus</i> [byʁ] → [byʁ] 1;10.04	<i>Babar</i> [babɑʁ] → [ba'ba:] 1;09.29

(6) a) Clara's mastery of word-internal codas	b) Clara's mastery of word-final [ʁ]
<i>dormir</i> [dɔʁmɪʁ] → [dɔʁ'mɪʁ] 2;03.19	<i>dort</i> [dɔʁ] → [dɔʁ] 2;03.15
<i>pansement</i> [pɑ̃smɑ̃] → [pæ'smæ] 2;03.19	<i>chaudière</i> [ʃɔdzjaʁ] → [sɔ'djeʁ] 2;03.19

In contrast to this, Théo's word-final [ʁ] is acquired at the same stage as his other word-final consonants, at age 2;03.20, in (7), before word-internal codas, mastered at age 3;07.06, in (8).

(7) a) Théo's mastery of final Cs (save [ʁ])	b) Théo's mastery of word-final [ʁ]
<i>embarque</i> [ɑ̃baʁk] → [ə'baʁ] 2;03.20	<i>encore</i> [ɑ̃kɔʁ] → [ə'kɔʁ] 2;03.20
<i>bus</i> [byʁ] → [pɔʁ] 2;04.06	<i>voir</i> [vwɑʁ] → [vwɑʁ] 2;04.06

(8) Théo's mastery of word-internal codas
<i>escabeau</i> [ɛʁkabo] → [ɛʁka'bo] 3;07.06
<i>fermer</i> [fɛʁme] → [fɔʁ'me] 3;07.06

We can thus conclude that Clara's placeless [ʁ] is syllabified word-finally as a coda, parallel to the Selayarese word-final coda distribution, in contrast to Théo's Dorsal-specified [ʁ], which is syllabified word-finally as an onset, similar to the place-bearing word-final onsets of Diola Fogny.

The processes in (3a), (4b), and (5b) are analyzed as follows. Clara's [ʁ] assimilation in (3a) is accounted for through high ranking of the constraint HEADPLACE, which requires consonants in head position to bear place features. In branching onsets, [ʁ] can surface as placeless since it appears in a dependent position, outside the scope of HEADPLACE. Théo's Dorsal-bearing [ʁ] satisfies HEADPLACE in singleton onsets in (4a). However, in branching onsets, Théo's [ʁ] yields a marked Coronal-Dorsal configuration, considered to be the source of the Dorsal assimilation in (4b). Finally, the vowel lengthening concomitant with word-final [ʁ]-deletion in Clara's outputs in (5b) results from the high ranking of MAXHEAD(Foot), which militates against the deletion of segments syllabified in the head of the foot in the input. Since Clara's word-final [ʁ] is syllabified as a coda, it is part of the last syllable with an overt nucleus, which corresponds to the head of the foot in French. Completely deleting this consonant would violate MAXHEAD(Foot). Instead of this, compensatory lengthening ensures preservation of part of input [ʁ], its timing position, thereby satisfying MAXHEAD(Foot).

This proposal is further supported by the fact that the compensatory lengthening triggered by Clara's word-final [ʁ] deletion is not found in other contexts. First, at the stage when word-internal codas undergo deletion, no compensatory lengthening is found (e.g. *ourson* [ʊʁsɔ̃] → [ʊ'sɔ̃] *[ʊ'sɔ̃] 'teddy bear' 2;03.05), because these codas are not in the stressed syllable in the input. Second, at the stage when word-final consonants other than [ʁ] are deleted, no lengthening is observed (e.g. *peigne* [pɛɲ] → [pɛ] *[pɛ:] 'comb' 1;06.22), because place-specified consonants are syllabified word-finally as onsets, outside the stressed syllable.