From babbling to first words in Tashlhiyt Berber: A longitudinal two-case study

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This paper presents preliminary results of a longitudinal study that focuses on the developmental trajectory of speech production capacities in two Berber children acquiring Tashlhiyt from the babbling period to the emergence of early grammar. There are very few studies on Berber language acquisition, and Tashlhiyt, the variety spoken in South-west Morocco, presents very interesting phonetic and phonological characteristics to study in a developmental perspective. For instance, unusual complex consonant clusters are very common in the language, which challenges classical approaches to syllable structure.

Background A large number of crosslinguistic studies on early acquisition have shown that independent of the characteristics of their ambient language, children follow the same developmental trajectory. In addition, strong similarities in sound types sound combinations and syllable type preferences across different communities have been frequently documented across the babbling and early word periods suggesting a universal foundation for early production patterns. These preferred trends in the babbling and first word periods have been explained by articulatory constraints and structural factors as well. But language acquisition is also linked to perceptual learning from input. It has been proposed that input from the ambient language may also influence the shaping of children's production preferences at some point in the late babbling and first word period, influencing common production system tendencies by the child's learning of precise ambient language regularities.

Methods Two Moroccan children acquiring Tashlhiyt Berber language were recorded every two weeks in their home from 7 to 24 months. 60 hours were broadly transcribed using IPA. Transcribed data was then entered into the Logical International Phonetic Programs software designed for describing phonetic patterns. Collected data was divided in two periods: period 1 from 7 to 12 months and period 2 from 13 to 24 months. Frequency of segments, syllable types, intra- and inter-syllabic associations in babbling, and first words were calculated for both periods.

Results Our data provide evidence for universal tendencies in babbling and first words: the subjects produced more stops, nasals and glides than other types of sounds; more coronals and labials than dorsals and gutturals; more vowels belonging to the lower left part of the vowel space than other vowels. Duplicated babbling was more frequent than variegated babbling. In variegation, both children variegated much more on the height dimension than on the front-back dimension as well as more on the manner than on the place dimension. Open syllables and more precisely the CV syllable type are predominant in both babbling and words. Concerning CV co-occurrences, a general tendency arises which associates within syllables coronal consonants to front vowels, dorsals to back vowel and labials to central vowels. These trends were particularly strong in words produced between 7 and 12 months. Only very few exceptions emerged and could be considered as evidence for ambient language patterning.

As to consonant clusters, one of the salient properties of Tashlhiyt adult grammar, a few emerge in period 1, starting at the age of 10 months old: [nd], [nkk], [nt], [qx] and [dss] are found in Reda's data. Some others emerge lately in period 2. They are mainly composed of two consonants one of which is often geminated: e.g. [ħkk], [dssi], [stti]. However, the general rule consists in simplifying consonant clusters by means of consonant deletion, syllabic truncation or vowel epenthesis. The following examples illustrate the situation:

Reda

Age	Gloss	Target	Production
18 months old	give me wash my hands	aradssirdɣ	alædssi
	pen	stilo	llju
	this one	ɣwwa	æbiwwa
	put it there	srstɣin	astti
	ball	takurt	æ:kkukku
	it is pulled	ikkis	əkkikki
19 months old	here the shoes	ha sbbatˤ	ha bbae:
	proper name	kawtar	kækækkæ
	Brahim went out	iffuɣ brahim	izzuppaehi:
	milk	lħlib	əllili

money	lflus	allu
bread	aɣrum	awwu

Some simplification processes used in these examples seem to obey prosodic constraints. That is, the final syllable which is stressed in Tashlhiyt Berber, is kept while the initial syllable is often deleted. Furthermore, some syllables which are assumed to function as syllabic consonants in adult phonology are deleted in child productions: for instance, the first /l/ in *lħlib*, which is be syllabic in Dell & Elmedlaoui's model (2002) is deleted in Reda's productions. Likewise, in the form *aradssird*ɣ, /ɣ/ would be analyzed as a syllabic consonant. This suggests the absence of syllabic consonants in child language.

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