

The Typology of the Distribution of [ʔ]: the propensity for bipositionality

In this talk we will discuss a 'rarissima' language, Ontena Gadsup. This language appears unique in defying the absolute phonological universal that the inventories of all languages must contain oral stop consonants.

(1) Ontena Gadsup inventory (Frantz 1994): Group 1 - ϕ , β , s, r, x. Group 2 - m, n, j, ʔ

Consonants of Group 1 are understood to surface as [p, b, t, d, k] in post-consonantal context, specifically after a homorganic nasal: [N_] and a glottal stop [ʔ_]. Because Ontena Gadsup has phonetic/surface stops, the violation of the universal is product of analysis (cf. discussion in Hyman 2008). As there are no reported alternations in the language, one can say that synchronically there is a non-contrastive pattern, the origin of which is probably a two-step process of post-vocal spirantisation and initial weakening.

The confirmation of this diachronic hypothesis comes from the related Akuna dialect of Gadsup, a language whose inventory (perhaps amusingly) contains no underlying fricatives (apart from [β]).

(2) Akuna Gadsup inventory (Frantz 1964): Group 1 - p, t, d, k. Group 2 - β , m, n, j, ʔ

In the Akuna dialect, we see the earlier pattern where post-vocalic spirantisation affects all stops. The consonants of Group 1 surface as stops in the same two contexts where stops are preserved in Ontena Gadsup, after a homorganic nasal and after a glottal stop. Crucially, Akuna shows a pattern that can be reconstructed for Proto-Otena Gadsup: initial weakening reduces all instances of word-initial historic *b to [β] and where word-initial /p, t, d, k/ variably (are beginning to) surface respectively as: [ϕ , s, r, x].

In terms of Element Theory (for a modern introduction - Backley (2011) and references therein), stops and nasals both contain an 'occlusion' feature known as 'edge': [ʔ]. In stops, *edge* is headed, while in nasals it is not. Fricatives do not contain *edge*. The peculiarity of Gadsup Ontena revolves, therefore, around the distribution of the headed *edge* element: [ʔ].

In Ontena Gadsup *edge* can only be found in post-nasal or post-glottal position, it is equivalent to saying that *edge* is only licensed in structures where it branches across two positions, once as a head (on the right - consistent with transconstituent government (Charette 1990) and once as a dependent (on the left). We show this in (3a) and (3b) beneath, while in (3c and 3d) we show that [ʔ] cannot be licensed in initial or intervocalic context (as a singleton).

(3) [ʔ] Licensed through branching

(a) Homorganic nasal [...mp...]

C	v	C
		ʔ
U		U
L		

(b) Glottal stop [...ʔ.p...]

C	v	C
		ʔ
		U

(c) Word-initial (illicit) *[ba]

C	V
ʔ	A
U	

(d) Word-medial singleton (illicit) *[apa]

c	V	C	V
	A	ʔ	A
		U	

The hypothesis that *edge* must occupy two positions of syllable structure is reminiscent of Jensen (1994), Pöchtrager (2006) and Pöchtrager & Kaye (2013), but unlike the previous analyses this is not a necessary condition, that is to say, it is not universal. Rather, it is a language specific *licensing constraint* (stated slightly differently from Charette and Göksel 1998), which regulates the phonological presence of this element. What remains universal, however, is the propensity for [ʔ] to be bi-positional (branch across two positions of syllable structure).

The hypothesis formed to explain Ontena Gadsup extends into a typology of the distribution of [ʔ]. In terms of the distribution of *edge*, languages form into two grand classes.

Type A [ʔ] is licensed by being bi-positional. Ontena Gadsup, Berber.

Type B C.C is licensed by branching *edge* [ʔ]. 'Prince languages', Soninké.

Type A languages can only have [ʔ] in branching, bi-positional, structures. As such stops cannot be found as initial or medial singletons, or after any consonant apart from nasals and glottal stops. It would appear that the spirantising dialects of Berber (e.g. Tarifit, Tamazight, Kabyle and some varieties of Tashlhiyt) are also of this type, where stops never spirantise after nasals nor in geminates (Kossmann & Stroomer 1997, Louali-Raynal 1988). The *edge* in these languages can only be found in bi-positional structures.

Conversely, Type B languages have *edge* in singleton positions, initially and medially, but any consonants arranged in a bi-positional dependency relationship ('heterosyllabic', transconstituent government, C.C) *must* contain *edge* in the head. This type of language is common, stops can be found word-initially and in other singleton positions, but the only clusters it allows are nasal-stop clusters or geminates, these are the so called 'Prince Languages'. This type of *edge* licensing is also shown to be active in Soninké, as evidenced by interesting singleton/geminate alternations (Creissels 2016).

We conclude by discussing the implications of this *edge* licensing analysis. In both language types there is a positive relationship between *edge* and bi-positionality, in the former *edge* is licensed by being bi-positional (branching), while in the latter bi-positionality is only possible if there is *edge*. While it is true that this bi-positionality is not universal, the variation in *edge* licensing is neither random nor logically exhaustive, therefore it does have value in terms of phonological universal grammar. Indeed, in no language is [ʔ] explicitly restricted in mono-positional structures. Ultimately this echoes the Honeybone notion: sharing makes us stronger (2005).

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