Areal alignment and the loss of ATR harmony in Riverine Bua languages (Chad)

Several linguistic areas have been identified in Africa, one of the most discussed in recent years being the Macro-Sudan Belt (MSB; Güldemann, 2008, 2010, 2018; Clements and Rialland 2008). Areas of intermediary size have also been identified (e.g. Central Africa within the MSB, cf. Dryer 2009, Idiatov 2018, Güldemann 2018b: 457; Rolle, Lionnet & Faytak 2020, a.o.). Such linguistic areas suggest a form of areal pressure, i.e., languages have a strong tendency to adapt their linguistic profile to the area where they are spoken, or where their speakers migrate into (cf. Güldemann 2020, Rolle et al. 2020 for examples of such changes).

The goal of this talk is to illustrate the inner workings of areal alignment, with a detailed case study of Bua languages (southern Chad), focusing on the changes that affect the vowel systems. Bua languages form a tight family of 9 languages, traditionally classified in the "Adamawa" grouping within Niger-Congo. The family is divided into two markedly different branches: Riverine languages (Lua, Ba, Tun) and Inland languages. Inland languages have a robust ATR contrast and harmony and no interior (i.e. central and other non-peripheral) vowels, while Riverine languages have no ATR contrast or harmony, and have interior (mostly central and front rounded) vowels. This difference is illustrated with the inventories of most Inland languages (and Proto-Bua, as I will show) in (1), and Lua (Riverine) in (3).

(1) Proto-Bua (and most Inland)   (2) Loss of ATR   (3) Central vowels > Lua (Boyeldieu 1985)

ATR:								
+	*i	*u	*i	*u	i	ɨ	u	*high*
−	*ɪ	*ʊ						
+	*e	*o	*e	*o	e	ə	o	*mid*
−	*ɛ	*ɔ	*ɛ *a *ɔ		ɛ	a	ɔ	*low*
−		*a						

Based on a comparative Bua database of about 600 terms (Author et al. 2023), I show that:

1) Proto-Bua had a 9-vowel system very close to that of Inland languages, with robust ATR contrast and harmony – a 2IU system in Casali's (2008) typology (step (1) above).

2) Riverine languages are doubly innovative: firstly, they lost the ATR contrast by merging the [-ATR] high vowels *ɪ and *ʊ with the [+ATR] mid vowels /e/ and /o/ respectively, and reinterpreted ATR harmony as height harmony in a rectangular vowel system (step (2) above), and secondly, they independently innovated central vowels (step (3)). This change confirms the tendency for ATR attrition to be caused by the loss of [-ATR] high vowels [ɪ ʊ], which are known to be perceptually confusable with either [i u] or [e o] (Casali 2003: 342; Rose 2018, a.o.). The confusability with [e o] was the phonetic precursor to the merger that took place in Riverine languages – a confusability that is still noticeable in present-day Inland languages, as I will show.

3) These changes are the result of areal alignment: the resulting vowel systems of Riverine languages are almost identical to those of neighboring languages: Laal (isolate), East Chadic, and Sara-Bongo-Bagirmi (Central Sudanic) languages. Conversely, the Inland languages (and by extension proto-Bua) have a general phonological profile that is unexpected in the area.

I will conclude with preliminary remarks and questions about (i) the relationship between ATR and interior vowels in the MSB; (ii) the sociolinguistic underpinnings of areal alignment – notably the crucial role of small-scale multilingualism (Lüpke 2016; DiCarlo et al. 2019); and (iii) what these diachronic changes tell us about the linguistic history of the region, notably about the time depth of the Central African ATR-deficient / Interior Vowel zone (Rolle et al. 2020), which the speakers of the distant ancestor of Bua languages (likely to have had ATR harmony) must have crossed in a distant past on their way from Nigeria to their current location.

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