

Unexpected prosodic marking of focus in Akan – the case of tonal lowering

Frank Kügler & Susanne Genzel

Department of Linguistics & Collaborative Research Centre 632 “Information Structure”
Potsdam University

This paper addresses two questions with respect to the expression of focus in a tone language. First, given that F0 is functionally used as the correlate of lexical tone the question is whether, and if so, to what extent intonational function such as focus marking may be expressed in a tone language. For Akan Boadi (1974) claims on the basis of an impressionistic description that *ex situ* focus is accompanied prosodically by means of tonal raising of High (H) and Low (L) tones. Thus, we expect Akan to belong to a group of tone languages that indeed uses prosodic means for encoding focus like for instance Mandarin Chinese (Xu 1999).

Given that we assume Akan to express focus prosodically the second question addresses whether *in situ* (1), (2) and *ex situ* (3), (4) focus is marked by means of different or identical prosodic strategies. In Akan, focus is encoded syntactically by constituent fronting to the sentence initial position and morphologically by the focus marker *nà* (3) (Boadi, 1974; Saah, 1988; Marfo & Bodomo, 2005; Ermisch, 2006; Kobele & Torrence, 2006; Amfo, 2010). According to Saah (1988) and Ermisch (2006) focus can also be expressed *in situ*. In a production study we examined the prosodic expression of focus in Akan, and in particular compare the prosodic realization of *in situ* and *ex situ* focused constituents.

Akan belongs to the Kwa branch of the Niger-Kongo family spoken by 8.3 million people in Ghana. As a tone language Akan distinguishes lexically L and H tones (Dolphyne, 1988), which mainly express grammatical meaning such as verb aspect and tense. The tone bearing unit (TBU) is the syllable, and syllabic structure only allows for open syllables (e.g. Dolphyne, 1988). According to Christaller (1933), Purvis (2009), and Anderson (2009) Akan also employs stress, yet the exact details of stress in Akan remain unclear.

In the production study eleven speakers of Asante Twi, one of the three main dialects of Akan, were asked to produce answers to prerecorded context questions. Recordings were conducted at the University of Ghana in Accra. Participants listened to pre-recorded context questions and were asked to answer these questions by reading the corresponding sentence aloud. The recordings were digitized at a sampling frequency of 44.1 kHz and 32 bit resolution. We analyzed target words carrying lexically L (*Àddò*) (1) or H tones (*àmânḡò*) (2) that were embedded in carrier sentences. The context questions put target words either in wide (serving as baseline for comparison), informational, or corrective focus (Krifka 2008). The target word in all sentences was labelled by hand at the level of the word and the syllable. Duration of target words in ms and F0 in Hz was measured in the middle of the TBU.

Results for F0 show a gradual decrease of pitch height with increasing prosodic prominence for *in situ* and *ex situ* constructions. H tones *in situ* associated with contrastively focused words are realized on average 1.5 semitones (st) lower than in the wide focus contexts. For *ex situ* focus we observe the same effect, contrastively focused words are realized on average 1.8 st lower than in the wide focus contexts. For the L tone we find *in situ* a lowering of 1.0 st under corrective focus and *ex situ* a lowering of 0.8 st in comparison the wide focus baseline. Duration did not show any significance. Thus, contrastive focus is prosodically marked by means of F0 lowering whereas informational focus is not.

The data suggests that prominence may be expressed prosodically by means of a deviation from an unmarked prosodic structure. The same strategy of focus marking is used *in situ* and *ex situ*. The results are thus contradicting the view of the effort code (Gussenhoven 2004) that predicts a positive correlation of more effort resulting in higher pitch targets. Furthermore they show that a tone language can mark focus by means of pitch register modification and therefore uses intonation to express sentence level pragmatic meaning.

Speech materials

- (1) Àgyèmàn bóaà Àddò ánòpá yí.
 Agyeman help.PAST Addo morning this
 ‘Agyeman helped Addo this morning.’
- (2) Ànúm tòò àmàngò ánòpá yí.
 Anum buy.PAST mango morning this
 ‘Anum bought a mango this morning.’
- (3) Àddò nà Àgyèmàn bóaà ánòpá yí.
 Addo FM Agyeman help.past morning this
 ‘It was Addo who helped Agyeman this morning.’
- (4) Àmàngò nà Ànúm tòò ánòpá yí.
 mango FM Anum buy.past morning this
 ‘It is a mango that Anum bought this morning.’

References

- Amfo, N. A. A. (2010). Lexical signaling of information structure in Akan. *Linguistics* 48, 95-225.
- Andersson, J. C. (2009). Preliminary to Preliminary: Speech Rhythm in Akan (Twi). In J. C. Anderson, C. R. Green & S. G. Obeng (Eds.), *African Linguistics Across the Discipline*, (pp. 133-143). Bloomington: IULC Publications.
- Boadi, L. A. (1974). Focus-marking in Akan. *Linguistics. An international review*, 140, 5–57.
- Bock, J. K. (1986). Syntactic persistence in language production. *Cognitive Psychology*, 18, 355 – 387.
- Christaller, J. G. (1933). *Dictionary of the Asante and Fante language called Tshi (Twi)*. Basel: Evangelical Missionary Society.
- Dolphyne, F. A. (1988). *The Akan (Twi-Fante) language: Its sound systems and tonal structure*. Ghana: University Press.
- Ermisch, S. (2006). Focus and topic Akan constructions in Akan. In S. Ermisch (Eds.) *Frankfurter Afrikanistische Blätter* 18 (pp. 51-68). Köln: Köppe.
- Gussenhoven, C. (2004). *The Phonology of Tone and Intonation*. Cambridge: Cambridge University Press.
- Kobebe, G., & Torrence, H. (2006). Intervention and focus in Asante Twi. In I. Fiedler & Schwarz A. (Eds.), *ZAS Papers in Linguistics* 46 (pp. 161–184). Berlin: Zentrum für Allgemeine Sprachwissenschaft, Sprachtypologie und Universalienforschung.
- Krifka, M. (2008). Basic notions of information structure. *Acta Linguistica Hungarica*, 55, 243-276.
- Marfo, C. & Bodomo A. (2005). Information structuring in Akan question-word fronting and focus constructions. *Studies in African Linguistics*, 34(2), 179-208.
- Purvis, T. M. (2009). Speech rhythm in Akan oral praise poetry. *Text & Talk*, 29 (2). 201-218.
- Saah, K. K. (1988) Wh-questions in Akan. *Journal of West African Languages*, 18, 17-28.
- Xu, Y. (1999). Effects of tone and focus on the formation and alignment of f0 contours. *Journal of Phonetics*, 27 (1), 55–105.