

Does Focus Really Condition Phonological Phrasing in Chichewa?

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•Background

Based on Kanerva's (1990) pioneering study, Chichewa is regularly cited in the focus intonation literature as the example of a language where the prosodic correlate of focus is:

- prosodic phrasing (and accompanying phrasal stress=penult lengthening)
- rather than culminative sentence-level stress (or accent).

(See, e.g., Hayes & Lahiri 1991, Hyman 1999, Yip 2002, Gussenhoven 2004, Ladd 2008.)

•Current controversy:

Does Chichewa have sentence level stress?

Samek-Lodovici (2005, 2006) – NO

and focused words have same level of stress as other stressed words in a sentence

Kanerva (1990) – his source – YES

and the penult of the Intonation Phrase final word is stressed (has greatest penult lengthening); focused word has lesser degree of penult lengthening.

Why does this matter?

Kanerva's description makes Chichewa an exception to the widely held view that a focused word must have the highest level of prominence in its domain = Stress-Focus Correlation.

•Our research questions:

1. Is the penult of words in narrow focus significantly longer than the penult of non-focused words?
2. Is the penult of the final word in the sentence significantly longer than penult of the other words in the sentence, including the penult of a word in focus?

Surprisingly, no thorough phonetic study of penult lengthening since Kanerva (1990) investigates these questions, and Kanerva does not provide figures to illustrate his description of penult lengthening.

Method

We elicited focus prosody by means of Q/A pairs, targeting broad focus, subject focus, verb focus and (non-final) post-verbal object focus.

The 7 subjects analyzed, all undergraduates at the University of Malawi and native speakers of Chichewa, read each Q/A pair a total of 10 times, randomly presented using Praat. They were instructed to read the statements in the way that sounded most natural as answer to the paired question. Two Chichewa native speaker linguist observers sat in on the recordings and agreed the readings were natural.

Expected results:

Positions where penult lengthening=phrasal stress is expected, based on previous work on Chichewa prosodic phrasing (Kanerva 1990; Downing et al. 2004):

- variably, the subject (if topicalized);
- sentence-final/pre-pausal word (culminative lengthening);
- words in narrow focus.

Figure (1) illustrates these expected positions of penult lengthening for sample data set; words in narrow focus are underlined:

- (1) (a)=broad focus; (b)=subject focus; (c)=object focus; (d)=verb focus
- (a) Q What happened? Chĩ-ná-chit-iká ndi chi-yáani?
- A The child hit the house with a rock. Mwaaná a-ná-ménya nyumbá ndi mwáálá.
- (b) Q Who hit the house with a rock? Ndaáni a-ná-ménya nyumbá ndi mwáálá.
- A The child hit the house with a rock. Mwaaná a-ná-ménya nyumbá ndi mwáálá.
- (c) Q What did the child hit with a rock? Mwaaná a-ná-ménya chi-yáani ndi mwáálá?
- A The child hit the house with a rock. Mwaaná a-ná-ménya nyuumbá ndi mwáálá.
- (d) Q Did the child hit (by pounding) or hit (by throwing) the house with a rock?
- Mwaná anaméenya kapena kugeenda nyuumbá ndi mwáálá?
- A The child hit the house with a rock. Mwaaná a-ná-méenya nyuumbá ndi mwáálá.

Actual results:

Table showing penult vowel durations under different focus conditions: mean (sd) [in ms], lengthening ratio in respect to final vowels (significantly longer vowels per sentence type marked in bold italics; penults of focused words are underlined)

Subject	focus	mwaaná	a-ná-ménya	nyumbá	ndi mwáálá
EN	broad	96.401 (11.175) 2.102	38.005 (9.018) 0.487	65.501 (8.696) 0.984	127.591 (16.080) 1.518
EN	verb	108.124 (10.462) 2.252	37.162 (15.932) 0.486	57.322 (7.132) 0.790	130.360 (21.270) 1.871
EN	object	92.898 (17.277) 2.228	37.689 (9.973) 0.493	59.371 (6.645) 0.916	117.048 (16.123) 1.529
GN	broad	103.762 (21.924) 1.988	32.590 (5.858) 0.530	57.940 (7.914) 0.561	102.041 (15.267) 1.181
GN	verb	110.051 (20.975) 2.075	31.103 (7.762) 0.593	45.775 (6.694) 0.580	109.078 (15.451) 1.802
GN	object	118.285 (22.675) 2.222	36.733 (12.588) 0.588	45.124 (9.543) 0.508	112.110 (13.002) 1.424
HC	broad	159.332 (50.731) 1.459	87.696 (15.802) 0.908	70.754 (23.791) 0.813	149.637 (25.300) 1.877
HC	verb	143.267 (45.511) 1.617	88.964 (23.344) 1.121	75.374 (9.017) 0.876	145.976 (21.847) 1.389
HC	object	139.832 (36.693) 1.503	76.798 (11.136) 0.951	72.298 (8.822) 0.810	162.107 (26.361) 1.768
IN	broad	108.691 (11.291) 2.380	67.321 (6.969) 0.916	100.365 (13.122) 1.268	125.405 (11.545) 1.401
IN	verb	101.210 (14.904) 2.142	60.721 (8.354) 0.986	64.702 (6.307) 0.956	133.823 (13.004) 2.840
IN	object	109.991 (17.009) 2.213	61.792 (9.896) 0.816	70.176 (9.128) 0.816	128.850 (26.822) 1.692
LM	broad	127.708 (5.921) 1.665	96.453 (17.434) 1.237	77.332 (15.986) 0.549	137.523 (15.507) 0.799
LM	verb	106.981 (13.322) 1.259	98.658 (18.352) 1.440	47.266 (4.094) 0.495	139.534 (10.653) 0.646
LM	object	131.393 (14.671) 1.488	99.513 (22.235) 1.437	62.189 (19.710) 0.467	140.033 (19.702) 0.788
PM	broad	135.822 (10.953) 1.545	74.411 (9.079) 0.898	79.769 (15.599) 1.165	145.732 (15.614) 2.426
PM	verb	135.578 (11.392) 1.430	75.637 (4.131) 0.838	79.587 (17.780) 1.044	127.685 (24.386) 1.841
PM	object	143.821 (8.720) 1.392	74.263 (8.653) 0.789	91.591 (13.162) 1.224	139.338 (9.853) 2.086
SY	broad	87.050 (15.998) 1.982	52.805 (12.281) 0.839	55.920 (13.319) 0.686	121.714 (18.084) 1.561
SY	verb	94.697 (16.028) 3.108	52.271 (7.845) 1.029	40.003 (8.559) 0.539	143.142 (15.124) 1.998
SY	object	86.681 (10.426) 2.595	56.453 (12.607) 1.119	43.124 (8.476) 0.622	139.028 (16.095) 2.003

To sum up, we find the following matches and mismatch between expected positions of penult lengthening and actual results:

Position	Result	Matches expectation?
subject	variable penult lengthening	expectation matched
sentence-final word	consistent penult lengthening	expectation matched
word in narrow focus	no consistent penult lengthening	EXPECTATION FAILS

Conclusion

•Our study confirms Kanerva's (1990) claim that IP-penult vowels – i.e., a (topicalized) subject and the final word of the sentence – are significantly longer than other vowels in the IP. That is, there is sentence-level stress (contra Samek-Lodovici 2005).

•However, we find that focus has no effect on penult vowel length: focused words attract neither phrasal stress nor sentence stress, a result that is clearly problematic for the Focus-Stress Correlation (Samek-Lodovici 2005, 2006).

•To account for the difference between these results and previous ones we propose that the penult lengthening reported for focused words actually reflects emphasis prosody (see, e.g., Ladd 2008), not focus prosody.

•Focus does not have obligatory prosodic correlates, but emphasis phrasing can disambiguate the locus of focus.