

# INTONATION AND FOCUS IN WEST GREENLANDIC

Anja Arnhold

University of Potsdam

anja.arnhold@googlemail.com

Presentation given at the ICPHS Satellite Workshop  
Intonational Phonology: Understudied or Fieldwork Languages  
August 5, 2007  
Saarbrücken

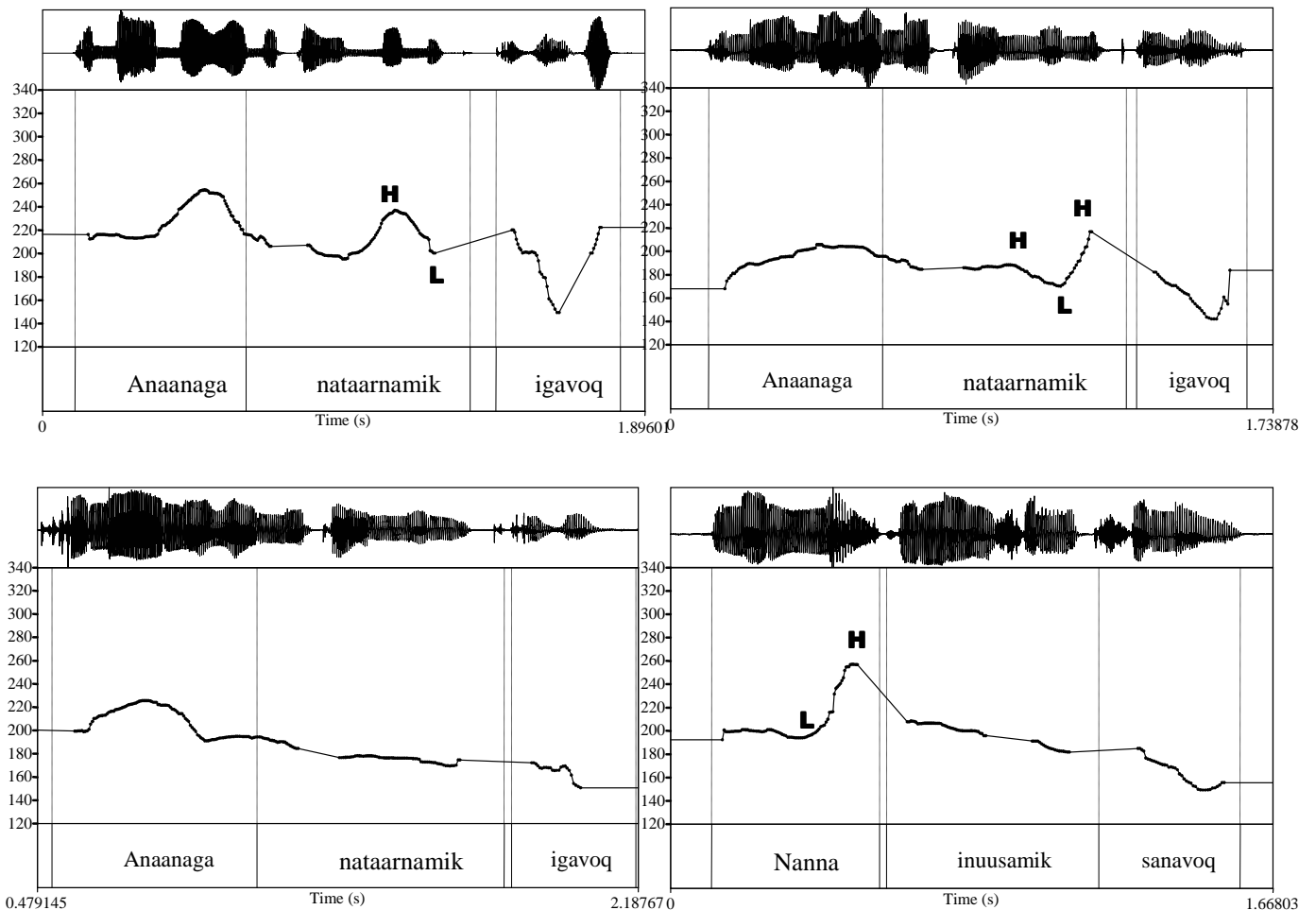
## 1 West Greenlandic intonation

### West Greenlandic

- Spoken on the west coast of Greenland (ca. 45,000 speakers)
- Basis of the written language
- Used in official contexts (school, church, TV, radio)

### Intonation

- No stress, lexical pitch-accents or tone
- Intonation is entirely shaped by boundary tones
- Most tones bear HLH or HL tones, but also raised-high, LH, words without tonal contour and final lowering are reported (cf. Rischel 1974, Fortescue 1984 Nagano-Madsen 1993)
- The data of this study shows HL, HLH, words without contour, and LH tones. Examples are given below for the sentences *Anaanaga nataarnamik igavoq* “My mother cooks a halibut” and *Nanna inuusamik sanavoq* “Nanna makes a doll”



## 2 Empirical basis

- Recordings with 4 female speakers
- 321 sentences (ca. 80 per speaker)
- standard (SOV) word order
- Recorded as answers in question-answer-pairs
- Basic sentences are illustrated below

Nanna<sub>S</sub> angajuminut<sub>IO</sub> inuusamik<sub>DO</sub> sanavoq<sub>V</sub>  
N.ABS older.sister-ALL doll-INSTR make-INTR-3SG  
“Nanna makes a doll for her older sister.”

Aanaga<sub>S</sub> Aviajamut<sub>IO</sub> ulimmik<sub>DO</sub> nuersaavoq<sub>V</sub>  
Grandmother-my.ABS A.-ALL shawl-INSTR knit-INTR-3SG  
“My grandmother knits a shawl for Aviaja.”

Anaanaga<sub>S</sub> angaannut<sub>IO</sub> nataarnamik<sub>DO</sub> igavoq<sub>V</sub>  
mother-my.ABS uncle-my.ALL halibut-INSTR cook-INTR-3SG  
“My mother cooks a halibut for my uncle.”

### Variation

1. Lexical items: 3 sentences (illustrated above)
2. Sentence length
  - a. S V
  - b. S DO V
  - c. S IO DO V
3. Incorporation of the direct object  
e.g.

Nanna inuusamik sanavoq	vs.	Nanna inuusa-lior-poq
N.ABS doll-INSTR make-INTR-3SG		N.ABS doll-make-INTR-3SG
“Nanna makes a doll.”		“Nanna makes a doll.”
4. Focus type
  - a. Broad focus
  - b. Narrow information focus
  - c. Narrow corrective focus
5. Focus location
  - a. On the subject
  - b. On the indirect object
  - c. On the direct object

### .Analysis

- Recording and analysis in Praat (Boersma & Weenik 2007)
- Smoothed and time-normalised pitch (script by Xu 1999, 2005)
- Automatic measurement of pitch maxima, minima and span
- Normalisation of relative to the speaker’s individual pitch range
- Manual and automatic identification of pitch contours

Formula used for normalising pitch data

$$y = \frac{x - R_2}{R_1 - R_2}$$

with y = the normalised value, x = the original value, R<sub>1</sub> = the average highest value for a speaker and R<sub>2</sub> = the average lowest value for a speaker.

### 3 Focus realisation

- Syntax: Each deviation from the standard word order will be interpreted as pragmatically marked  
 Piniartup puisi pisaraa. (Neutral word order)  
 “The hunter-ERG caught the seal-ABS”  
 Puisi piniartup pisaraa. (Obj = topic)  
 Piniartup pisaraa puisi. (Obj = focus)  
 (adapted from Fortescue 1984:181)
- Morphology: The focused constituent can be marked by a clitic like the demonstrative –una (cf. Fortescue 2003)
- Intonation: Focus is marked by variation in the realisation of the tonal contour and by pitch range

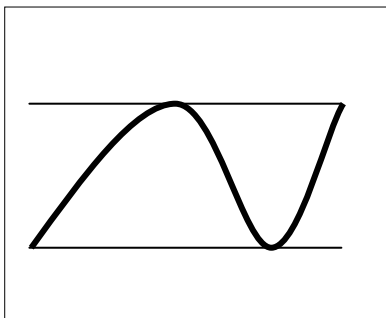
#### Tonal contour

- Narrow focus increases the number of HLH realisations
- No significant contrast between broad focus and given information
- Variation between the focus types, focussed constituents and speakers

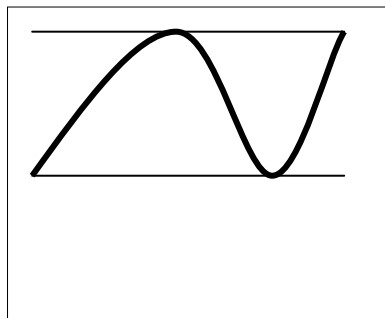
#### Pitch range

- A difference is made between span and register (cf. Gussenhoven 2004) as illustrated below

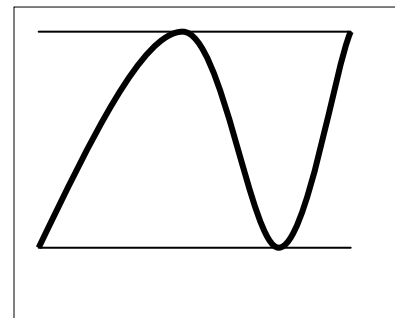
#### Default realisation



#### Higher register

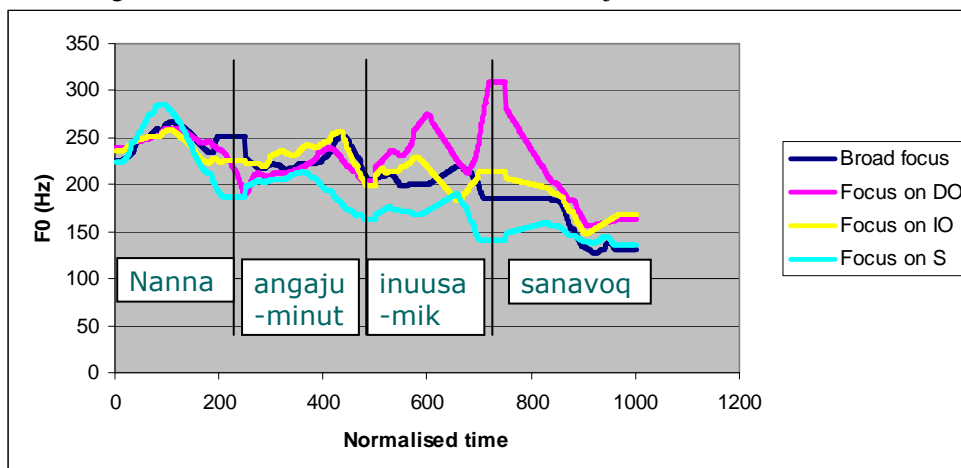


#### Increased span



#### Example below:

- Focus on the direct object increases the span and raises the register
- Subject focus increases the span and lowers the register of the postfocal domains
- No significant effect of focus on the indirect object

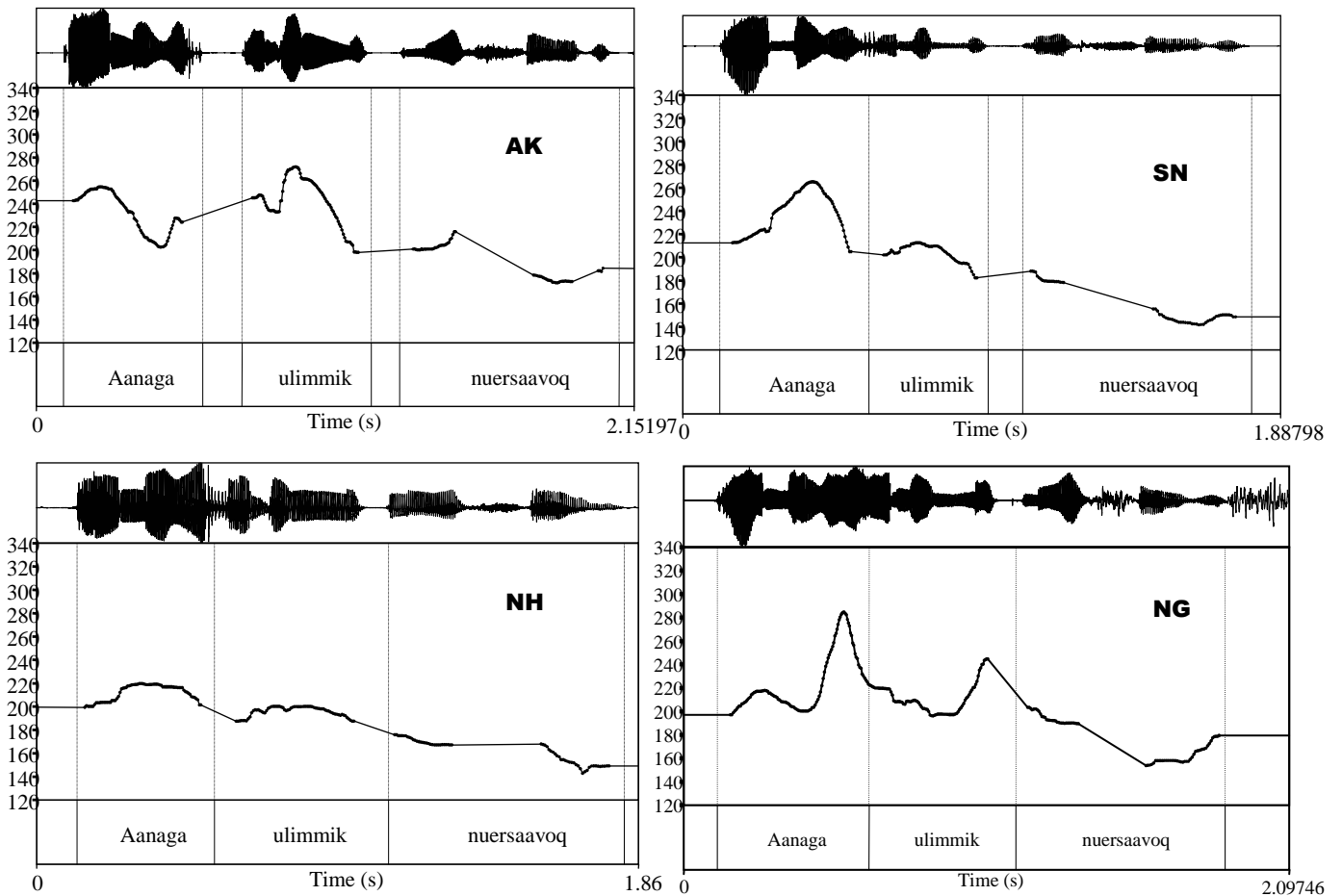


#### Variation between the focus types

- Broad focus is usually marked by a higher register
- Narrow focus (information focus and corrective focus) leads to an increased span
- Information focus induces higher maxima, corrective focus results in lower minima

## Variation between the speakers

- The pictures below show four speakers' realisations of the sentence *Aanaga ulimmik nuersaavoq* "My grandmother knits a shawl" (with information focus on the subject)



## 4 Summary

### Focus realisation in West Greenlandic intonation

- Tonal contours: Focus induces a higher percentage of HLH realizations
- Pitch range: Focus is marked by an increased span and/or higher register
- Variation between focus types, focussed constituents and speakers

## 5 References

- Boersma, P. & Weenink, D. 2007. Praat: doing phonetics by computer (Version 4.3.36) [Computer programme]. Retrieved from <http://www.praat.org/>
- Fortescue, M. 1984. *West Greenlandic*. London/Sydney/Dover, New Hampshire: Croom Helm.
- Fortescue, M. 2003. West Greenlandic (Eskimo). In: Booij, G. E., Lehmann, C., Mugdan, J. & Skopeteas, S. in collaboration with Kesselheim, W. (eds.) *Morphology: An international handbook on inflection and word-formation*. Berlin: Walter de Gruyter (HSK 17, 2), 1389-1399.
- Gussenhoven, C. 2004. *The phonology of tone and intonation*. Cambridge: Cambridge University Press.
- Nagano-Madsen, Y. 1993. Phrase-final intonation in West Greenlandic Eskimo. *Working Papers* 40, Lund University, Dept. of Linguistics, 145-155.
- Rischel, J. 1974. *Topics in West Greenlandic phonology. Regularities underlying the phonetic appearance of wordforms in a polysynthetic language*. Copenhagen: Akademisk Forlag.
- Xu, Y. 1999. Effects of tone and focus on the formation and alignment of  $f_0$  contours. *Journal of Phonetics* 27:55-105.
- Xu, Y. 2005. TimeNormalizeF0.praat (Version 2.3.2) [Praat script]. Retrieved from <http://www.phon.ucl.ac.uk/home/yi/downloads.html>