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Annotation of Haitian Creole prosody and intonation

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Previous research on Haitian Creole (henceforth HC) prosody

Brousseau 2003, Teixeira Kalkhoff in press, and Teixeira Kalkhoff peer reviewing process built some hypotheses about HC prosody:
(i) hybrid prosodic system shaped by West African languages and French, (ii) stress accent system, (iii) word accent,
(iv) phonological word as the domain of accentuation, (v) usage of grammatical and pragmatic tones, and (vi) penultimate lengthening

Previous research on HC intonation

Fattier 2005 describes the system of HC interrogative morphemes and mentions without further explanation interrogative intonation of HC interrogation patterns

Motivation for a phonetic level of transcription of prosody and intonation

"Data from the IViE corpus show that the phonetic implementation of intonation is extremely variable. At first sight, there is so much variation that one might be tempted to think that the variation is chaotic. But the variation is not chaotic – if one compares realisations of an utterance produced in identical contexts within and across varieties, one can see that much of the variation is systematic. But one can arrive at this conclusion only if one has a way of making a record of the phonetic variation. The transcriptions on the target tier provide such a record. They provide a set of testable hypotheses, for instance about the alignment of pitch accents and tunes in different varieties of English. Intonation researchers can then test these hypotheses via acoustic measurements. […]
But experienced transcribers can also disagree on phonological categorisations of pitch patterns - again, the phonetic transcriptions offer a starting point for discussion." (The IViE Labelling Guide)

ANNOTATION HIERARCHY FOR ANNOTATING HC PROSODY AND INTONATION
BASED ON THE IViE/IVTS MODEL (Grabe & Post 2004; Post & Delais-Roussarie 2006)

(i) **Comment tier = COM** for remarks, e.g. penultimate lengthening (PL), breathing, or pause

(ii) **Segmental tier = SEG** to enable durational measurements of vocalic segments to assess HC penultimate lengthening

(iii) **Syllable tier = SYL** to assess HC syllabic complexity

(iv) **Phonological tier = IPH** for building first hypotheses about the intonational phonology of HC using parsimoniously ToBI labels (Silverman et al. 1992)

(v) **Pragmatic tier = PRA** to enable the annotation of speech acts using a set of pragmatic tags in order to make searchable speech acts within the annotated data, see below

(vi) **Information structure tier = INF** to annotate focus accents (FA) in order to make searchable pragmatic tones within the annotated data

(vii) **Micro-prosodic (phonetic) tier = MIP** to annotate phonetically the realized pitch movement in the range of prominent syllables or Implementation Domain (ID) using IViE labels, see below

(viii) **Rhythmic/Prominence tier = PRO** to highlight stress and pitch accented prominent syllables (P), rhythmic boundaries (%), and hesitation or speech error (#)

(ix) **Prosodic constituency tier = PCO** to annotate prosodic constituency with break indices

(x) **Orthographic tier = ORT** for the orthographic transcription of the speech signal

(xi) **Glossed tier = GLO** for interlinear glossing to make searchable grammatical tones upon the function word class DET (The Leipzig Glossing Rules 2015)

LABELS FOR THE PRAGMATIC TIER (work in progress)

References:
- Linguistic Communication and Speech Acts (Bach & Harnish 1979)
- Speech Act Annotated Dialogue Corpus (SPAADIA) (Leech & Weisser 2014)
- Interactive Atlas of Romance Intonation (Prieto et al. 2010–2014) respectively Intonation in Romance (Frota & Prieto 2015)

An extendible list of speech act labels (working version):
- Statement = **STA**
- Enumeration = **ENU**
- Question:
  - Yes-no-question = **YNQ**
  - WH-question = **WHQ**
  - Indirect question = **INQ**
- Command = **COM**
- Request = **REQ**

LABELS FOR THE MICRO-PROSODIC (PHONETIC) TIER (The IViE Labelling Guide)

- Implementation domain (ID): "An ID corresponds to an accent foot plus the preaccentual syllable. Each ID contains (1) the preaccentual syllable, (2) the accented syllable, (3) all following syllables (if any) up to the next accented syllable."
- **H, M, L** are used for pitch levels or glides on accented syllables (e.g. L = level, LH = glide)
- **h, m, l** for the unstressed syllable preceding the strong syllable, and for any unstressed syllables following the strong syllable
- - is used to connect the final pair of phonetic labels in an ID
- Tonal assignment:
  - Pitch range of the female HC speaker: 150-300 Hz = 150 Hz
  - H, h = 230–300 Hz (= the two uppermost quarters of the pitch range)
  - M, m =185–230 Hz (= the range in between)
  - L, l = 150–185 Hz (= the lowermost quarter of the pitch range)

LABELS FOR THE PROSODIC CONSTITUENCY TIER (Frota 2012)

- The break index 4 indicates intonational phrase boundaries
- The break index 3 indicates intermediate phrase boundaries
- The break index 2 indicates clitic group boundaries
- The break index 1 indicates phonological word boundaries
- The break index 0 indicates junctions between content and function words

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THE ANNOTATION HIERARCHY IMPLEMENTED IN PRAAT (Boersma & Weenink 2018)
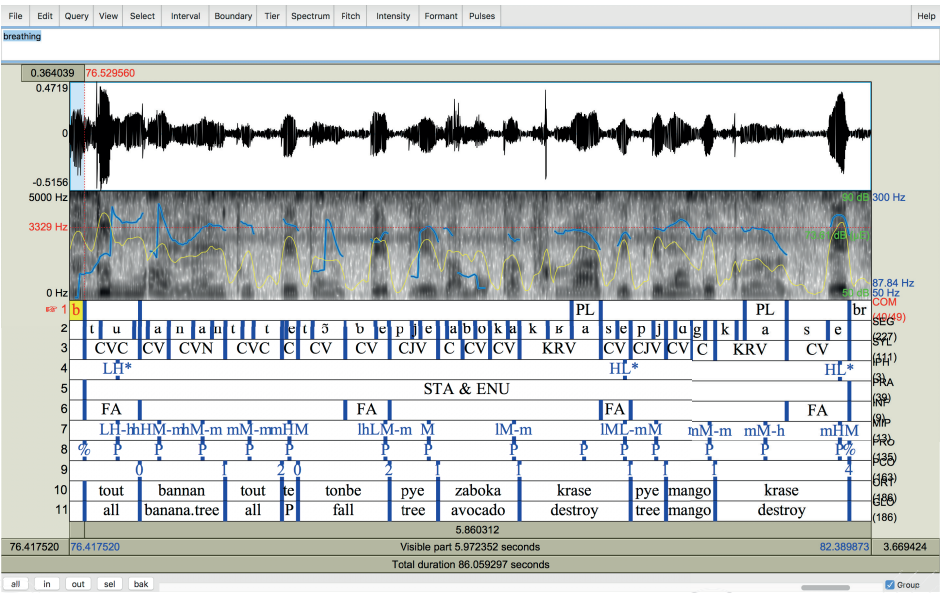
REFERENCES

Bach, Kent & Harnish, Robert M. 1979. Linguistic Communication and Speech Acts. Cambridge, Mass.: MIT Press.
Boersma, Paul & Weenink, David. 2018. Praat: Doing phonetics by computer [Computer program]. Version 6.0.42, retrieved 16 August 2018 from http://www.praat.org/.
Brousseau, Anne-Marie. 2003. The accentual system of Haitian Creole: The role of transfer and markedness values. In Plag, Ingo (ed.), Phonology and morphology of Creole languages (Linguistische Arbeiten 478), 123-145. Tübingen: Niemeyer.
Fattier, Dominique. 2005. Remarques sur l'interrogation en créole haïtien. La Linguistique 41(1). 41-55.
Frota, Sónia. 2012. Prosodic structure, constituents and their implementation. In The Oxford Handbook of Laboratory Phonology. Edited by Abigail C. Cohn, Cécile Fougeron, and Marie K. Huffman, 255-265. Oxford: Oxford University Press.

Frota, Sónia & Prieto, Pilar (eds.). 2015. Intonation in Romance. Oxford: Oxford University Press.
Grabe, Esther & Post, Brechtje. 2004. Intonational variation in the British Isles. In Sampson, Geoffrey & McCarthy, Diana (eds.), Corpus Linguistics: Readings in a widening discipline, 474-482. London: Continuum International.
Leech, Geoffrey & Weisser, Martin. 2014. The SPAADIA annotation scheme. (http://martinweisser.org/publications/SPAADIA_Annotation_Scheme.pdf) (Accessed 2018-08-16.)
Post, Brechtje & Delais-Roussarie, Elisabeth. 2006. Transcribing intonational variation at different levels of analysis. ISCAM Archives, Speech Prosody 2006, Dresden, Germany, May 2-5, 2006. (http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.615.1724&rep=rep1&type=pdf) (Accessed 2018-08-16.)
Prieto, Pilar & Borràs-Comes, Joan & Roseano, Paolo (coords.). 2010-2014. Interactive Atlas of Romance Intonation. (http://prosodia.upf.edu/iari) (Accessed 2018-08-16.)

Silverman, Kim & Beckman, Mary & Pitrelli, John & Ostendorf, Mari & Wightman, Colin & Price, Patti & Pierrehumbert, Janet & Hirschberg, Julia. 1992. ToBI: A standard for labeling English prosody. In Proceedings from the 2nd International Conference on Spoken Language Processing (ICSLP 92), Banff, Alberta (Canada). 867-870.
The Leipzig Glossing Rules: Conventions for interlinear morpheme-by-morpheme glosses. 2015. (https://www.eva.mpg.de/lingua/pdf/Glossing-Rules.pdf) (Accessed 2018-08-16.)
Teixeira Kalkhoff, Alexander. In press. Éléments et structures suprasegmentaux. In Krämer, Philipp & Mutz, Katrin & Stein, Peter (eds.), Manuel des langues créoles à base française (Manuals of Romance Linguistics). Berlin: De Gruyter.
The IViE Labelling Guide, version 3, copyright by Esther Grabe, 2001 (http://www.phon.ox.ac.uk/files/apps/IViE/guide.html) (Accessed 2018-08-16.)