

Introduction

- Meaning conveyed by a non-lexical conversational (N-LC) sound is encoded in the sound itself [1]:
 - N-LC sounds can be decomposed into acoustic components (AC)
 - Each AC bears a meaning
 - N-LC sounds final meaning can be inferred from their acoustic composition
- Approach: focus on the acoustic signal; mostly on visual cues
- RQ:
 - What AC?
 - Combinatory/Sequential constraints?

Material

- Focus on nasal grunts (NG; [2]): sub-category of N-LC sounds that share a [+nasal] feature e.g. <hein, han, mmhm, uhuh, ehm, hum>.
- Cross-linguistic study in the
 - CID (French [3]);
 - SBC (American English [4]);
 - NECTE (Geordie English; [5]).
- Selected files:
 - Conversations between dyads
 - Spontaneous (or meant to be)
 - Certain degree of intimacy

Acoustic Analysis and Annotations

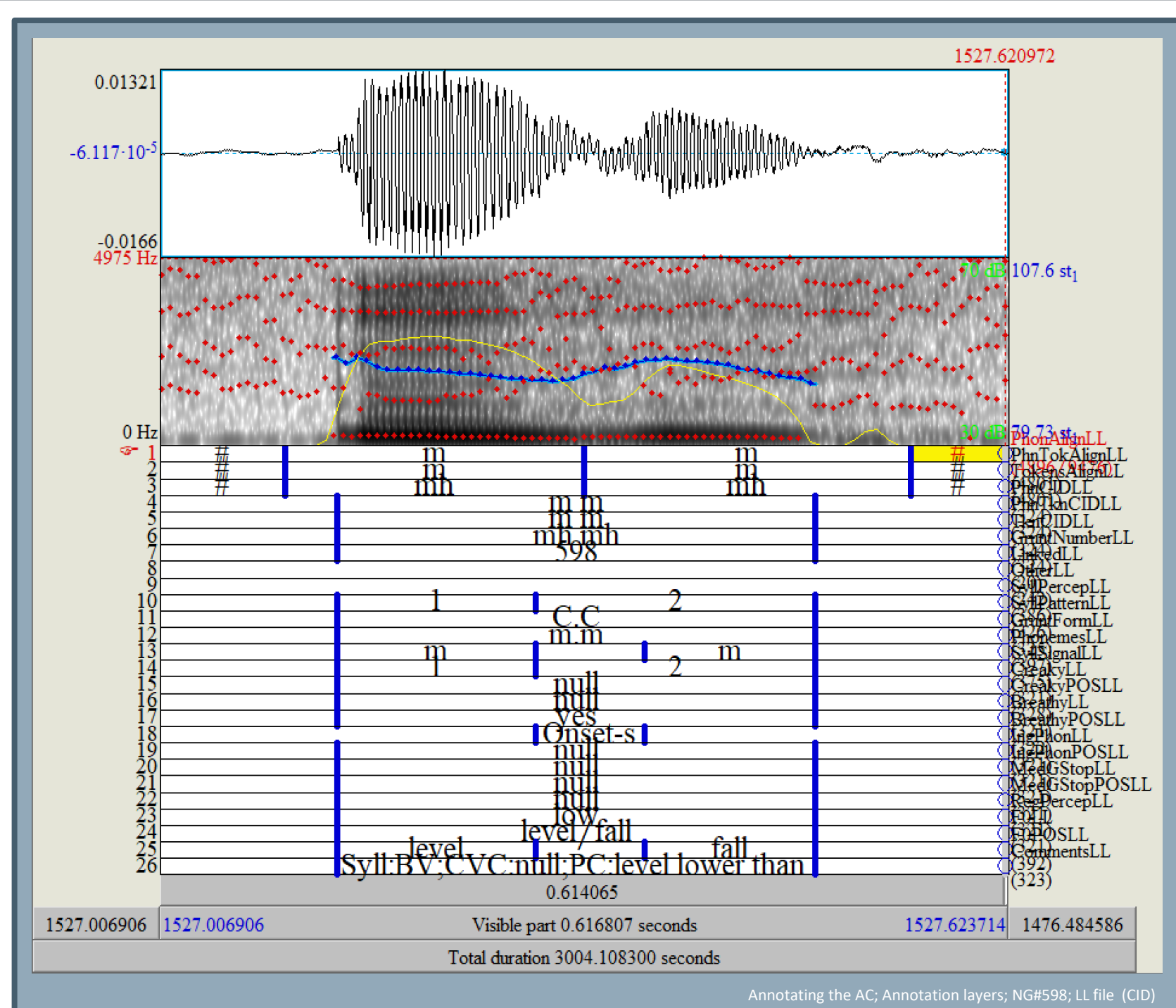
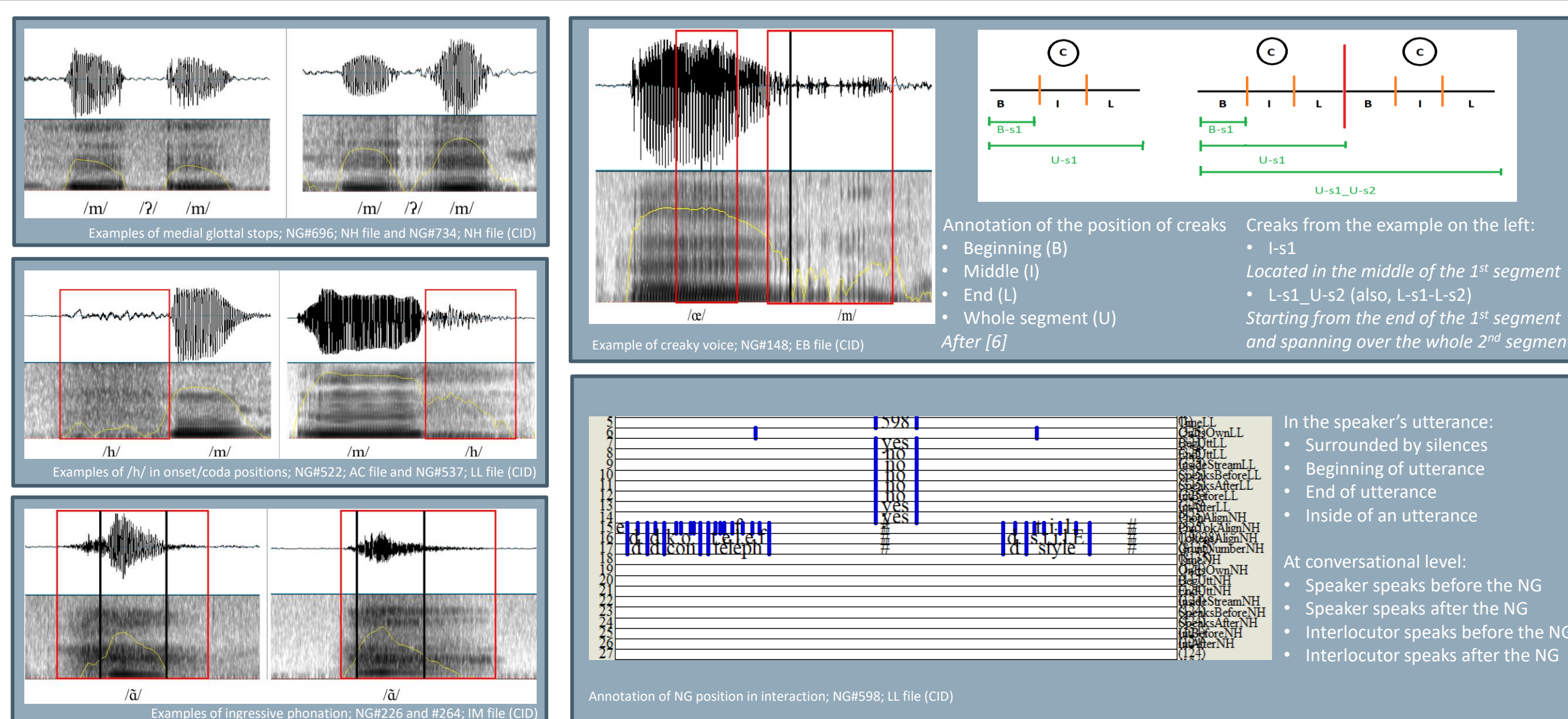


Fig.1: Examples of the annotations of NG from the CID (AC and distribution) Most screencaptures from [8]



- Annotations made with Praat software [7]
- Explanations of annotation guidelines in [8]

Main Issues

1. One annotator
Cross-annotations in the making
2. Pitch register is not retrievable from visual cues
3. Nasal vowels vs. Nasal consonants
Problematic, both auditorily and visually
Continuum from closed to open mouth?
4. Syllable division
Conflict between visual and auditory cues

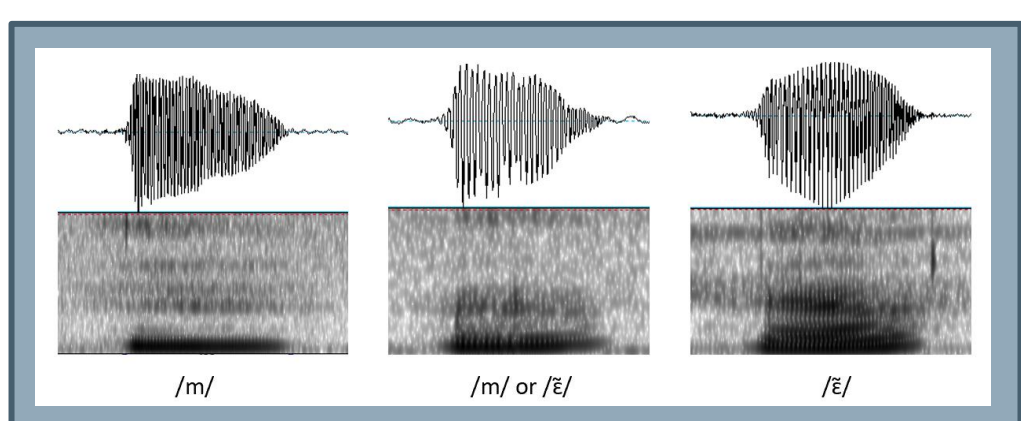


Fig. 2: Difficulty to discriminate between nasal vowels/consonants visually; NG#698; #732; #723; NH file (CID)

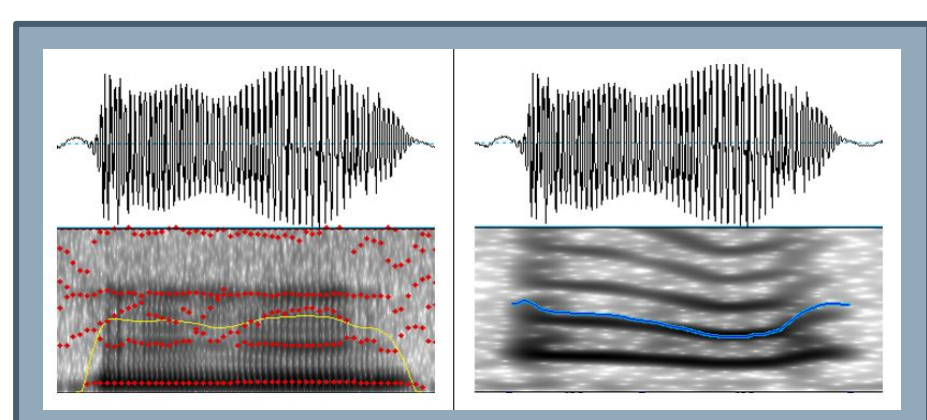


Fig. 3: Conflicting cues for syllable division; NG#438; MB file (CID) From [8]

Solved with insertion of /h/ or glottal stops; as in /m.hm/ vs. /mʔm/

A Grammar of NG and their AC ?

1. Fundamental vs. additional AC
 - Nasal segment, duration, F0 variations, amplitude & register
 - Creakiness, ingressive phonation, glottal stop & /h/ or breathiness
 2. Fixed combinations
/ʌ/ or /ə/ in American English, /ɛ/ (sometimes /ə/) in Geordie English and /oe/ in French always appear before the consonant /m/
 3. Canonical forms of bisyllabic NG
 - Duration 1st syll. < duration 2nd syll.
 - Reversed duration = Implicature
- Similar results in the 3 corpora

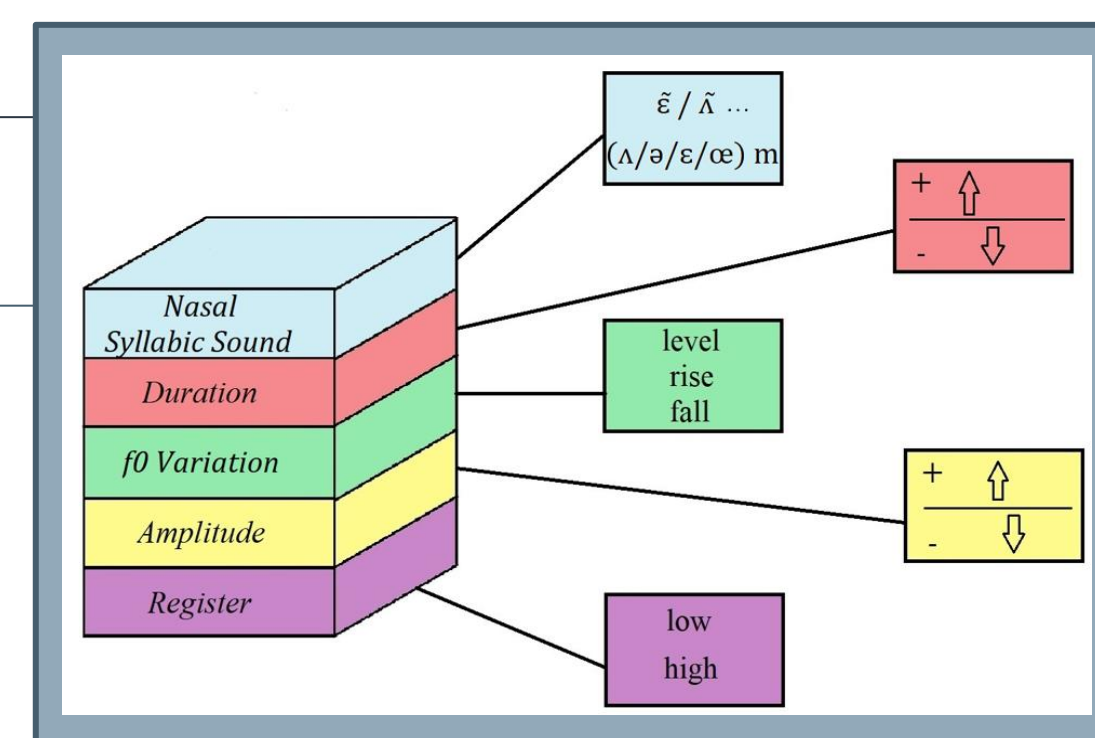


Fig. 4: Components essential to the production of monosyllabic autonomous NG in our corpora

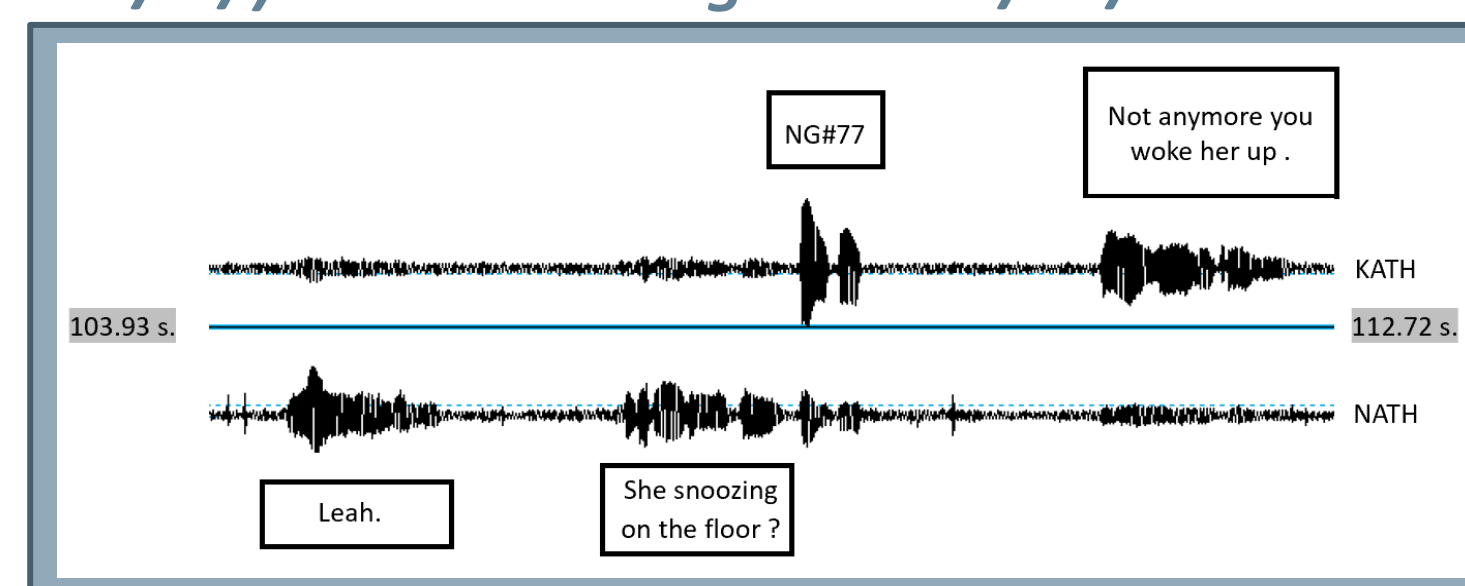


Fig. 5: NG#77 (KATH-NATH conversation; SBC)

Further research

- Combinations of AC:
 - Likely vs. unlikely
 - Socio-cultural constraints
 - Impossible
 - Physiological constraints
- Semantics and Pragmatics of AC:
 - Physiological constraints vs. Semantic motivations
 - Cross-linguistic variations
- NG vs. other N-LC sounds (e.g. laughter)
 - Similar AC
 - Similar semantics?
 - Similar origins?

References:

- [1] Ward, N. (2006). Non-lexical conversational sounds in American English. *Pragmatics & Cognition*, 14(1), 129-182.
- [2] Chlébowski, A. and Ballier, N. (2015). Nasal grunts in the NECTE corpus. *Meaningful interactional sounds. EPIPA-4th International Conference on English Pronunciation: Issues & Practices*, 54-58.
- [3] Bertrand, R., Blache, P., Espesser, R., Ferré, G., Meunier, C., Priego-Valverde, B. and Rauzy, S. (2008). Le CIDCorpus of Interactional Data-Annotation et exploitation multimodale de parole conversationnelle. *Traitement Automatique Des Langues*, 49(3), 105-134.
- [4] Du Bois, J. W., Chafe, W. L., Meyer, C., Thompson, S. A., and Martey, N. (2000). *Santa Barbara Corpus of Spoken American English. CD-ROM*. Philadelphia: Linguistic Data Consortium.
- [5] Corrigan, K., Allen, W., Beal, J., Maguire, W., Moisl, H., and Rowe, C. (2001). *Newcastle Electronic Corpus of Tyneside English Corpus*.
- [6] Ramshaw, L. A. and Marcus, M. P. (1995). Text chunking using transformation-based learning. *CoRR*. ArXiv Preprint [arXiv:1905.04040](https://arxiv.org/abs/1905.04040), 50.
- [7] Boersma, P. and Weenink, D. (2019). *Praat: doing phonetics by computer [Computer program]*.
- [8] Chlébowski, A., and Ballier, N. (2020, May). A Manually Annotated Resource for the Investigation of Nasal Grunts. In *Proceedings of The 12th Language Resources and Evaluation Conference* (pp. 6514-6522).