

Documentary Linguistics: outline of phonetic documentation

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1 Overview of logistics

Four dimensions of planning are involved in phonetic documentation:

1. The method:
 1. aural observation, transcription, and analysis, which is always necessary;
 2. audio (often also visual) recording and annotation (often done simultaneously with transcription).
2. The domain (all are accessible to experimental measurement methods):
 1. articulatory (accessible to visual observation, tactile, kinetic self-observation),
 2. acoustic (partially accessible to aural observation),
 3. auditory (not accessible to aural observation).
3. The logistics:
 1. Phase 1, pre-recording phase (definition of domain; development of scenario, experiments, instructions, prompts; organisation of materials including recording device, microphones, recording media; collection and preparation of data).
 2. Phase 2, recording phase (written transcription of aurally observed data; studio or field recording of signal data).
 3. Phase 3, post-recording phase
 1. technical: standardisation of sustainable, reusable and interoperable storage and interchange formats (Unicode, XML), sustainable and reusable storage of data;
 2. linguistic: analysis of
 1. phones, phoneme-allophone relations, phonotactic cooccurrence
 2. phonemic, morphemic, word, phrase, sentence, text, dialogue prosody (pitch, intensity, timing patterns).
4. The software tools:
 1. Specification of required tools (Praat, Audacity, Goldwave, Cooledit, ...);
 2. Acquisition or software development of required tools;
 3. Evaluation and deployment of required tools.

2 Application to T-B tone analysis

2.1 Phase 1, pre-recording phase

Overview of phoneme system, minimal pair list, construction of complex words (reduplication, compounding) identification of word prosody and its functions/meaning (contrastive, grammatical, linking, ...) in both simple and compound words (tone, pitch accent, stress accent).

The following materials are the output of the pre-recording phase.

1. List of minimal pairs for
 1. Vowels
 2. Consonants
 3. tones
2. Quotation context frame for recording isolated words with a preceding and following quotation context, in order to avoid utterance-initial and utterance-final effects.
 1. The frame can be of the kind:
 1. I repeat “.....” again.
 2. My name is not “.....” at all.

2. The structure of the frame is:
left context FOCUS right context
3. Recording script for exploratory work, in which each example has the following three-part pattern:
example translation quotation frame
4. Metadata for each recording, minimally:
 1. Name of speaker (possibly encoded).
 2. Place of recording.
 3. Date of recording.
 4. Name of language, dialect, variety.
 5. Type of data.
 6. Statement of permission for scientific use.
5. For detailed phonetic analysis, the following additional conditions must be met:
 1. Each example should be spoken 3, 4 or 5 times.
 2. There should be different examples of the same case (e.g. H tones on different words).
 3. The examples should be arranged in a random order in order to avoid sequencing effects, contrastive contexts, etc.

2.2 Phase 2, recording phase

The following recording environment will be used:

1. Sound-proofed studio.
2. Solid state recording device Edirol R09 with 2 GB SD card.
3. Ideally, external studio microphones would be used; these are currently not available, so the internal microphones will be used.

The distance to the microphones is about 10 cm. The input volume is adjusted to be as high as possible without producing signal peak overloading.

Before recording, and every 5 minutes or so, the speaker should sip a little water.

During recording, absolute silence must be observed in other respects – no writing, touching paper, etc.

The recording session starts with the recording of the metadata, followed by the recording of the data.

2.3 Phase 3, post-recording phase

In the post-recording phase, the recordings are pre-processed for further work, annotated, and archived.

1. Pre-processing of recordings for further processing, using the “audacity” programme. Note that files at any stage of the post-recording phase should never be changed directly: new copies are made for the next stage of post-recording processing.
 1. Normalisation to highest possible volume, removal of DC component.
 2. Removal of false starts, instructions, external noises.
 3. Re-ordering of random items to bring related items (e.g. minimal pairs) together.
2. Annotation of recordings on the following tiers (not all tiers may be necessary):
 1. Groups of related items (e.g. minimal pair examples).
 2. Individual example groups (example + translation + quotation context)
 3. Target language components of example groups (examples, quotation contexts)
 4. Focus of translation contexts.
 5. Phonemic annotation of consonants and vowels in example and focus.
 6. Annotation of tones.
3. Archiving of originals and processed files.

3 Comments

At this point, phonetic and linguistic analysis can start.