

## Dialects or idiolects? Using SpeechIndexer to document prosodies in endangered Austronesian languages

There has been very little research conducted on Taiwan indigenous languages, especially in the area of suprasegmentals. Our work of language documentation and the following analysis intends to fill this gap. The languages in our study include the Tsou, Kanakanavu and Saaroa still in use by some hundreds and dozens of speakers respectively, in the southern mountainous region of Taiwan. They are regarded as the oldest branch of Austronesian language family, so the rising interest in their research is understandable. Over two decades we have analyzed their grammatical system, vocabulary, but their dialectal differences, which mostly manifest themselves in intonation, besides lexical and some segmental phonological variation, are still undescribed. Regional differences (between settlements) can be observed in intonation and cadence. There is a melodious rising tone in statements, storytelling of the Tefuye dialect. Generally the speed of speech is slower. The sentence intonation of Shanmei tends to be falling and the articulation, average speed of speech is much higher. The speech of Laiji village however tends to be 'soft' and even scolding, hearing people argue gives the hearer the impression of kind praise.

In our paper we intend to generalize from corpora of spontaneous speech recording, to try to work out the parameters of differences. There has been attempts to conduct such a comparison by systematic questionnaires, but the results were not comparable, the main reason being the unnaturalness of field investigation and design of examples (interrogative, imperative sentences and statements) by the researchers.

Since we use the recently developed software of SpeechIndexer, which operates on the principle of semi-automatic marking of uninterrupted speech, also the display of energy patterns and intonations patterns of the flowing speech sounds, we were able to avoid this problem. In SpeechIndexer we can load many hours of speech data with the corresponding broad transcription and the similar intonation groups can be separately saved together with their contexts. In this way we are able to handle the correlation of grammar (sentence modalities) and the intonation generalities of many speakers. This helps us to resolve the ambiguities observed in speech of elderly persons (last remaining speakers), where it was hard to decide whether they use idiolects or the differences really derive from the dying dialects.

Our presentation intends to provide data on these languages for the broader linguistic, phonological community and also tries to popularize a new software which makes it easier to handle large amounts of empirical data. We also hope to gain new inspiration from our colleagues.

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Software application and first results of comparison: