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Processing and analyzing audio data: From audio files to text-as-data methods

Digital data are increasingly used in social science research and many adjacent fields, as they support more fine-grained and holistic analysis. In this talk, I specifically focus on audio data in the form of open narrative voice responses that were collected in smartphone surveys in Germany. In particular, I showcase three research scenarios on how to process and analyze audio data: (1) I start with the extraction of tonal cues, such as pitch and amplitude, to predict affective states. (2) I then focus on machine-based transcriptions building on Automatic Speech Recognition (ASR). I put special emphasis on accuracy (or quality), error sources, and speed. (3) Finally, I analyze linguistic and content characteristics of automatically transcribed audio data using text-as-data methods. The talk ends with empirical-driven best practices and recommendations.