

Respiratory belts and whistles

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In this talk we will discuss to what extent breathing kinematics can be used as a cue to turn-taking behaviour in spontaneous multiparty conversation. We improve on existing accounts by considering all possible transitions between speaker states (silent, speaking, backchanneling) and by not relying on global speaker models. Instead, all features (including breathing range and resting expiratory level) are estimated in an incremental fashion using conversation history. We identify several inhalatory features relevant to turn-management, and assess the fit of models with these features as predictors of turn-taking behaviour.

We also present first results on using breathing acoustic as a turn-taking cue. We demonstrate that inhalation intensity significantly differentiates between cycles coinciding with no speech activity, shorter (< 1 s) and longer stretches of speech. We also show that the model fit is comparable to the fit of the model using kinematic features, and that incorporating both kinematic and acoustic features further improves the model. Given the ease of capturing breath acoustics, we consider the results to be a promising first step towards studying communicative functions of respiratory sounds. We discuss possible extensions to the data collection procedure with a view to improving predictive power of the model.