

The expanding role of prosody in speech communication technology

Nick Campbell
TCD
Dublin, Ireland
nick@tcd.ie

Abstract

Speech communication is a uniquely human attribute that plays a multifaceted role in human social interaction. At its core from one point of view lies language and linguistic structure, yet from a more fundamental point of view we find 'prosody' underlying many levels of speech communication, serving to signal not just linguistic but also interpersonal and social information.

Early humans would have had recourse primarily to tone-of-voice for basic communication but as language use became more sophisticated over evolutionary time this medium of human interaction became subsidiary to more sophisticated elements of communication, though its use did not disappear entirely.

In the development of technology for processing human speech, the linguistic element has long been considered prime. This talk will focus, however, on the 'tone-of-voice' aspects of prosody in social interaction, tracing their development in technological research from a carrier of linguistic information, signalling semantic and syntactic structure, to that of a social indicator, signalling affective and interpersonal cues that are equally essential to effective communication in a social situation.

By thus unravelling the role of prosody in speech, we will trace its uses from higher to lower levels of sophistication, and suggest some aspects of prosodic interpretation that might enable a technology for the processing of interpersonal states and attitudes in addition to and alongside the processing of propositional content in the speech signal.