

# **An exploratory study into interspeaker variation in creaky voice in Dutch**

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Creaky voice occurs regularly in speech, although we are usually unaware of it. In a language such as Dutch, creaky voice is not phonemic but nevertheless often occurs as a result of changes in subglottal air pressure throughout an utterance. It has been reported that there appears to be a large amount of interspeaker variation in creaky voice (Böhm & Shattuck-Hufnagel, 2009; Kuang, 2017; Dallaston & Docherty, 2020), but this has typically been observed incidentally and there have only been a few studies dedicated to characterising this variation.

In the current study, we have examined the conversational speech of 30 men recorded in the Corpus of Spoken Dutch (Oostdijk, 2000). Data were manually annotated for occurrences of creaky voice and each creaky interval was categorised as one of several subtypes of creaky voice based on the degree of periodicity (cf. Keating et al., 2015). Each annotated interval was also analysed acoustically with measures of  $f_0$ , cepstral peak prominence, and measures of spectral balance.

Our results show that interspeaker variation in creaky voice is indeed considerable. The frequency with which creaky voice occurs ranges from very low in some speakers to notably high in others. Speakers also use the subtypes of creaky voice in different proportions. Furthermore, there are interspeaker differences in the acoustic parameters, which allows for above-chance speaker classification by means of linear discriminant analysis. These results suggest that measures of voice quality may be useful in speaker discrimination applications, such as forensic voice comparisons.

## **References**

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