

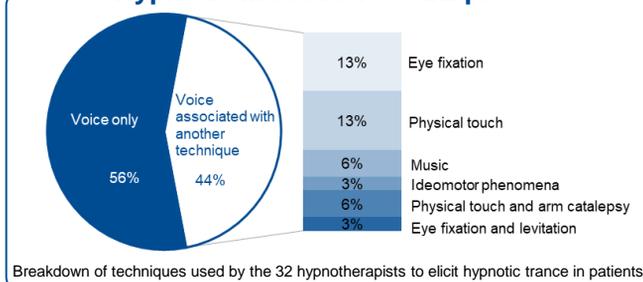
Introduction

Hypnosis is a therapeutic technique in which clinicians make suggestions to individuals by means of the voice. This procedure results in a distinct state of consciousness involving focused attention and reduced peripheral attention (Elkins, Barabasz, Council, & Spiegel, 2015). Paralinguistics, including the voice used by hypnotherapists, is little described. The few indications concerning vocal patterns that promote a state of hypnotic trance are limited to subjective observations. Clinical textbooks recommend using a quiet, gentle, reassuring, and warm voice to create a sense of intimacy and confidentiality (Grinder & Bandler, 1997; James, 2010). Experimentally, the role of therapists' voice characteristics during a session of progressive muscle relaxation training has been assessed with acoustic measures (Knowlton & Larkin, 2006). To the best of our knowledge, such measures have not been applied to characterize the voice used to induce hypnotic trance. The **aim** of this study is to investigate the existence of a voice pattern specific to hypnosis. We hypothesize that voice characteristics of hypnotic induction differ from those of normal speech.

Methods

32 French-speaking hypnotherapists (18 women and 14 men) who practise hypnosis in a medical or psychological context were recorded while reading a single text in **two conditions**: with a normal voice and with a voice they would use for hypnotic induction. For each of these two conditions, the following **acoustic analyses** were conducted with Praat software: mean fundamental frequency (F0, in Hz), mean sound pressure level (SPL, in dB), variability of F0 and SPL, and degree of voice breaks (DVB, in %).

Hypnotic induction techniques

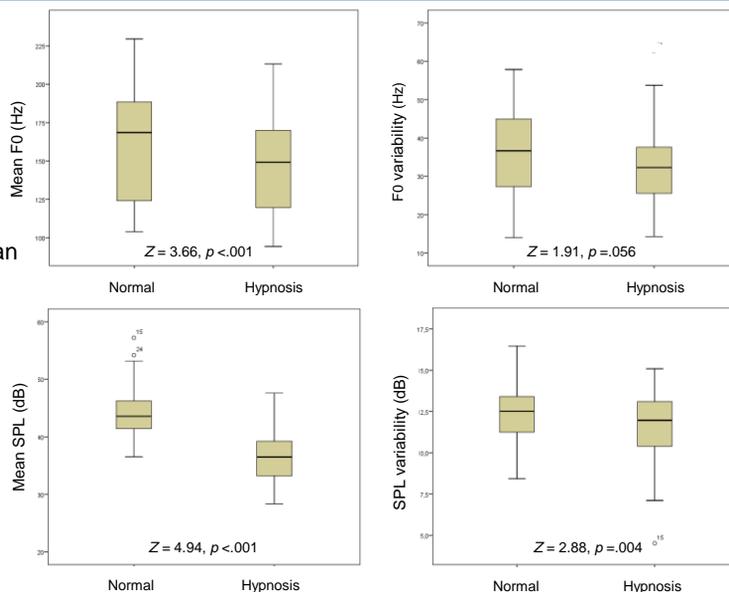


Results

Wilcoxon tests indicate that, compared to a normal voice, a hypnotic voice presents

- significantly lower F0 ($\Delta Med = -19.3$ Hz)
- significantly lower SPL ($\Delta Med = -7.1$ dB)
- significantly less variable SPL ($\Delta Med = -0.5$ dB)
- a trend toward less variable F0 ($\Delta Med = -4.4$ Hz)
- significantly more DVB ($\Delta Med = 13.8\%$)

Legend. ΔMed = Hypnosis Median – Normal Median



Discussion and Conclusions

These preliminary results allow us to identify differences between the voice used to induce hypnosis and a normal voice. The acoustic correlates of voice in hypnosis are low frequency, low intensity, few pitch and intensity modulations, and devoicing. Similar F0 and SPL patterns were found to facilitate the therapeutic process in progressive muscle relaxation (Knowlton & Larkin, 2006). As previously observed in infant-directed mothers' speech, low F0 may convey comfort (Lam & Kitamura, 2006). Low F0, low SPL, and reduced F0 variability are also associated with low levels of physiological arousal in the expression of emotion (Bachorowski, 1999). Regarding the lesser degree of voicing in hypnotic voices, subsequent analyses will test the hypothesis that the voice is breathy and whispery, at least at times, and that pauses are longer than in normal speech. With the aim of generalizing our findings, we are currently analysing spontaneous speech recorded in hypnosis sessions.

References

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