

THE ACOUSTIC CORRELATES OF HYPNOTIC VOICE

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Although the linguistic content of hypnotic suggestions has been investigated in various studies, the paralinguistic aspects – that is, the voice used by hypnotherapists – are little described. The few indications concerning vocal patterns that promote a state of hypnotic trance are limited to subjective descriptions based on clinical observations, as reported in textbooks (Grinder & Bandler, 1997; James, 2010). From an empirical point of view, voice characteristics have been assessed objectively with acoustic measures in the context of muscle relaxation (Knowlton & Larkin, 2006); however, to the best of our knowledge, such measures have not been applied to identify vocal indices of the voice used to induce hypnosis. The aim of this study is to investigate the existence of a voice pattern specific to hypnosis. To that end, 32 French-speaking therapists (18 women and 14 men) who practice 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 used for hypnotic induction. For each of these two conditions, the following acoustic analyses were conducted with Praat software: degree of voicing (in %), mean fundamental frequency (F0, in Hz), mean sound pressure level (SPL, in dB), and variability of F0 and SPL. Statistical analyses (Wilcoxon test) show that, compared to a normal voice, a hypnotic voice presents less voicing ($p < .001$), lower F0 and SPL ($p < .001$), less SPL variability ($p = .003$), and a trend toward less F0 variability ($p = .056$). These preliminary results allow us to provide objective acoustic correlates of a hypnotic voice, such as low frequency, low intensity, monotone and lack of voicing. These acoustic characteristics correspond to the subjective voice descriptions given in textbooks, such as quiet, gentle, reassuring, and warm, which tend to create a sense of intimacy and confidentiality. Regarding the lower degree of voicing in hypnotic voices, subsequent analyses will make it possible to test the hypothesis that the voice is breathy and whispery, at least at times, and that there are longer pauses than in a normal voice. Analyses of spontaneous speech during hypnosis sessions are currently under way to test the generalizability of the results presented here.

References

- Grinder, J., & Bandler, R. (1997). *Patterns of the hypnotic techniques of Milton H. Erickson, M.D.* Vol. I. Portland, OR: Metamorphous Press.
- James, U. (2010). *Clinical hypnosis textbook: A guide for practical intervention* (2nd ed.). Oxford, UK, New York: Radcliffe Publishing Ltd.
- Knowlton, G. E., & Larkin, K. T. (2006). The influence of voice volume, pitch, and speech rate on progressive relaxation training: Application of methods from speech pathology and audiology. *Applied Psychophysiology and Biofeedback*, 31(2), 173–185. doi:10.1007/s10484-006-9014-6