

Title: Spectral cues caused by smiling trigger unconscious facial imitation

Abstract:

The ability to judge and recognize emotions is a fundamental characteristic of human beings. In the last decades, research has shown cross-cultural evidence highlighting the relevance of emotional facial expressions. Smiles, for instance, have been shown not only to be recognized across cultures, as a positive object, but also to trigger fast and automatic facial reactions.

But smiling, does not only change the facial display of a person, it also changes the vocal apparatus, modifying subtly its acoustic cues. However, almost nothing is known about the processing of these "auditory smiles": are they only the by-product of a primarily visual phenomenon, or can they trigger the fast, automatic and unconscious reactions that we associate with facial expressions? Using state-of-the-art audio transformation algorithms, we developed a voice manipulation technique able to simulate the acoustical consequences of phonation with stretched or pursed lips. We used this manipulation to parametrically control the amount of 'smiliness' in spoken sentences, and show that these cues in the absence of any visual stimulation are enough to trigger congruent unconscious facial reactions.