High pitch – Friendly face

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Visual and Acoustical Displays for Aggression and Appeasement

- Animals and humans display aggression by low pitch sounds whereas appeasement displays uses high pitch.
- In humans, lowered eyebrows are interpreted as displays of aggression (Keating et al., 1981).
- Low pitch sounds may symbolize aggression because of its association with large size (Morton, 1977).
- Melodic phrases sound more aggressive and threatening when transposed to a lower pitch height (Huron et al., 2006).
- The smile could have an acoustic rather than visual origin (Ohala, 1980). Smiling bares the teeth but also reduces the volume of the oral cavity, thereby raising the pitch and signaling appeasement rather than aggression.

Is there an inter-modal link between auditory and visual displays?

Experiment

44 participants (19 female, 25 male) passing by on campus volunteered to sing high and low notes while we took their picture. Participants first sang a note and vowel of their choice and were then asked to sing both higher and lower than the first note. The order high/low was randomized.

In a forced choice task four judges watched picture pairs displaying sung high and low notes and indicated the friendlier looking face (see Figure 1).

In a second test four other judges chose the friendlier looking face for picture pairs edited to only show the eye region.

Results

Faces singing high notes were selected as the friendlier looking face significantly more often than faces singing low notes (p<0.001).

Excluding the parts around the mouth, the pictures of high notes were still considered as friendlier than those of low notes (p<0.001).

These findings suggest an intermodal link between vocal and facial displays.

Our results are consistent with the idea that the use of low pitch to signal aggression may be neurologically linked to aggressive facial expression and that the use of high pitch to signal appeasement is linked to appeasing and friendly expressions.

References: