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Observing a chameleon: How to bridge a gap between the voice training and its scientific description

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An overview of the authors' research on perception and production of singing voice as well as on the methods of voice training is presented. In the first study, a correlation was found for a group of voice students between the duration of training and the strength of the singer's formant, while the tone quality estimates were not significantly higher for students with longer practice years. In the second study we investigated possible acoustical correlates of the 'forward'/'backward' placing of a voice. A 'forward' placed voice may have higher F1, F2 and/or the singer's formant frequencies as well as a higher level of the singer's formant. In the third study we investigated the intonation accuracy in a cappella performance. There are considerable inter-individual differences between performers as to their adjustment of pitch level. The stability of intonation varies significantly both within a single rendition of the vocal exercise as well as between its consecutive renditions. There is a positive correlation between the deviation of a melodic interval from its equally tempered standard value and the number of out-of-tune judgments by the listeners. The dispersion of out-of-tune judgments is considerable, which suggests that listeners might have adopted different criteria for intonation accuracy.