

Demonstration 15. Octave Matching (1:46)

Experiments on octave matching usually indicate a preference for ratios that are greater than 2.0. This preference for stretched octaves is not well understood. It is only partly related to our experience with hearing stretch-tuned pianos. More likely, it is related to the phenomenon we encountered in Demonstration 14, although in this demonstration the tones are presented alternately rather than simultaneously.

In this demonstration, a 500-Hz tone of one second duration alternates with another tone that varies from 985 to 1035 Hz in steps of 5 Hz. Which one sounds like a correct octave? Most listeners will probably select a tone somewhere around 1010 Hz.

Commentary

“A 500-Hz tone alternates with a stepwise increasing comparison tone near 1000 Hz. Which step seems to represent a “correct” octave? The demonstration is presented twice”.

References

- D. Allen (1967), “Octave discriminability of musical and non-musical subjects,” *Psychonomic Sci.* 7, 421-22.
- E.M. Burns and W.D. Ward (1982), “Intervals, scales, and tuning,” in *The Psychology of Music*, ed. D. Deutsch (Academic Press, New York) pp. 241-69.
- J.E.F. Sundberg and J. Lindqvist (1973), “Musical octaves and pitch,” *J. Acoust. Soc. Am.* 54, 922-29.
- W.D. Ward (1954), “Subjective musical pitch,” *J. Acoust. Soc. Am.* 26, 369-80.