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*Those Notes in Your Head: A Psychological Comparison Between Audible and Imagined Sound*

This study asks subjects with varying degrees of musical training to judge the proximity between audible and imagined standard, and purely audible comparison tone stimuli. In one condition, both tones are physical sounds. In the other condition, the standard tone is imagined, based on the memory of a specific tone presented at the beginning of the test. The goal of this study is to relate the strength of tonal ability (as measured by an absolute pitch test) to the dimension of pitch experience (based on judgments of proximity). I hypothesized that there would be a significant relationship between a subject's absolute pitch score and the accuracy of his/her proximity judgments in both the audible, and imagined C4 standard tone test conditions using the Western chromatic scale as the comparison. 22 subjects were administered the tests on PsychoPy, using sine-wave tones to illuminate timbral bias. The majority of subjects experienced a drift of the C4 imagined standard tone. On average, this drift was flat 1 semitone. Additionally, subjects scoring higher than 20 on the absolute pitch test (out of 36), experienced less shift in their memory of C4 than those scoring lower than 20. The same group that scored below this value also experienced, on average, 10% less root mean squared accuracy in their proximity judgments than those scoring above 20 as compared with the "ideal" observer. These findings establish a unique trend in negative tonal drift poorly documented in literature, and provide grounds for further investigation using brain-imaging technologies.