

ACOUSTICS2008/3344

Converging Evidence in Evaluating Acoustical Intimacy

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Previously, we presented a novel interactive pilot experiment in which participants modified parameters in a virtual acoustical environment so that they corresponded to three intimacy settings: low, medium, and high. Additionally, participants were asked to rank the – yet unknown – parameters (volume, direct-to-reverberant energy ratio, frequency attenuation, and room size) in terms of the importance in making their judgments. Based on a larger body of data, the direct-to-reverberant energy ratio emerges as the strongest acoustical correlate of intimacy. A repeated-measures test revealed that the "preservation" of this parameter (the degree to which a participant changed the value from an optimum setting) varies the least across intimacy levels and across levels of previous training. Additionally, this parameter is consistently ranked as being the most important in the ranking portion of the test. We also found that salience of some of the other parameters varied significantly across intimacy levels, possibly suggesting a weighting system is warranted. These results are compared with binaural measurements of the virtual system. In particular, we will address disparities from the pilot experiment and recent data that resulted from differences in measuring the direct-to-reverberant energy ratio. [Work supported by RPI HAAS Fellowship and ASA Minority Fellowship]