



Joint Meeting

137th regular meeting of the Acoustical Society of America
2nd convention of the EAA: Forum Acusticum
- integrating the 25th German Acoustics DAGA Conference

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Acoustic quality of musical instruments and categorization. Michèle Castellengo, Charles Besnainou (Laboratoire d'Acoustique Musicale, CNRS-UPMC-Min.Cult., 11 Rue de Lourmel, 75015 Paris, France), and Danièle Dubois (CNRS-INaLF (LCPE) 1 Rue Maurice Arnoux, 92120 Montrouge, France)

The qualitative evaluation of high vintage musical instruments gives rise to several theoretical as well as technical questions. Depending on the experts, either instrument-makers trained in various technologies or variously skilled and styled interprets, the judgments rely on different criteria, regarding the object itself, its manipulations, as well as acoustic or aesthetic properties of the sounds it produces. Various experiments were run with classical guitars (Montchalin, 1993), harpsichords (Guyot, Castellengo, Dumoulin, 1997), and violin bows (Saint-Loubry, Besnainou, 1997). The judgments were processed in free categorization tasks of musical (listened or performed) sequences, followed by verbal comments on the partitions realized. The analysis of the psychological judgments of similarity and difference, and the linguistic processing of the verbal comments, led to identify the relevance of various perceptual modalities (not only acoustic but also kinaesthetic, haptic, and even visual) as well as symbolic associations constructed through experience and training. Physical correlates of the psychologically relevant parameters were transformed by sound synthesis. These experiments allow further theoretical and practical conclusions.