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Perception, verbal description and gestural control of piano timbre

Caroline Traube^{a,b}, Michel Bernays^{a,c,b} and Madeleine Bellemare^a

^aLaboratoire informatique, acoustique et musique, Faculté de musique, Université de Montréal, C.P. 6128, succursale Centre-Ville, Montréal, QC, Canada H3C 3J7

^bCentre for Interdisciplinary Research in Music Media and Technology (CIRMMT), Schulich School of Music of McGill University, 555 Sherbrooke West, Montréal, QC, Canada H3A 1E3

^cBRAMS International Laboratory for Brain, Music and Sound Research, Université de Montréal, 1430 boul. du Mont-Royal (Outremont), Montréal, QC, Canada H2V 4P3

Musical expressivity in virtuosic pianistic performance relies heavily on timbre and performers call upon a vast vocabulary to describe the nature of their sound; examples of adjectives include velvety, metallic, bright, round and dark. The present study aims to determine whether this vocabulary, its perceptual meaning and the gesture applied to obtain the sounds it describes, stand as consensual among pianists. The relations between timbre, articulation, register and dynamics are also examined. Nearly 100 verbal descriptors were collected as well as the description of the associated gestures. Some timbres are specific to certain dynamic levels and others are the result of a combination of at least two sonic elements into one resulting sound object, where articulation, - the relation between one note to the next, - plays a crucial role. A subset of these adjectives has been selected for further study. A professional pianist performed, on a computer-controlled recording acoustic piano, three short project-designed pieces with several timbres, as designated by adjectives. The excerpts were also captured with microphones to serve as stimuli for a timbre recognition task, both in free form and by selection, to which a group of 17 pianists performed with great accuracy.