Motivation

investigate the mimicry of production of sonic elements through force control/investigate the user's exploration of the medium for the communication of expressive intentions

Provide further evidence for mapping strategies between profiles for adaptive interfaces

Methodology

Stimuli: set of tones produced by real trumpet performer

Material: ergos haptic device @1000Hz

Participants: 5 25-30 aged student members of Idmil lab

Protocol: control position of spring model for the simulation of intensity profiles with different dynamics and articulation conditions

Measurements Excerpt

Extract of control profiles for one subject in isolated tones task, for pp, mf and ft dynamics

Extract of control profiles for two subjects in consecutive tones for non legato, legato and staccato articulation.

Results

Perceived sound intensity VS maximal forces applied for isolated notes

-> dynamics relation linearize with effort

Note durations for stimuli and control profiles for different stiffnesses

-> temporal discrimination increases with effort

Discrepancy between stimulus profile and gesture profile, for single isolated note (three lefmost), single embedded note (three middle) and consecutive notes (three rightmost)

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References

M. M. Wanderley, J. Violet, F. Isart, and X. Rodet, "On the choice of transducer technologies for specific musical functions", ICMC 2000