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PERSONAL IDENTIFIERS IN MUSICIANS' FINGER MOVEMENT DYNAMICS *Simone Dalla Bella[1], Caroline Palmer[2]; [1]University of Finance and Management, Warsaw, Poland, [2]McGill University, Montreal, Canada* – Studies on the recognition of personal identity are conducted mostly using static images such as photographs (e.g. faces) and fingerprints. In contrast, dynamic information such as movement properties in gait is relatively neglected, regardless of its potential role as a marker of personal identity. In order to examine to what extent movement properties can characterize personal identity we studied finger movements in skilled piano performance. Using motion capture techniques, finger motion from skilled pianists was recorded while they performed two memorized melodies on a musical keyboard (n = 45 performances). Pianists' finger motion in the vertical plane (perpendicular to the piano keyboard), accounting for how fast (loud) keys are struck was analyzed relative to piano key movement with Functional Data Analysis methods. Changes in movement velocity and acceleration were consistent within participants and across musical contexts, in particular as the fingers approached the keys (anticipatory movement). Velocity/acceleration patterns were unique for each pianist; these dynamical "signatures" emerged in particular before keypresses. Accurate pianists' classification (84% correct; chance = 25%) was achieved by training a neural network classifier using velocity/acceleration trajectories preceding keypresses. In sum, pianists' goal-directed finger movements offer dynamic identifiers comparable to traditional static information. Finger movement dynamics in the proximity of a goal (e.g. keypress in piano performance) in complex sequences carry information about personal identity.