When the Body Listens Back

Gesture as sonic feedback, rethinking the performer-instrument relationship

What happens when every gesture can be heard? As a drummer, I am constantly aware that sound is born from movement — the raising of an arm, the tension of a wrist, the breath before impact. Yet these essential gestures usually remain silent. My research seeks to make them audible. *When the Body Listens Back* explores the sonic potential of movement through real-time motion tracking and sound transformation. Using computer vision techniques the system captures movement while allowing the performer's body to remain completely free. The goal is not to control sound, but to let natural gesture resonate, creating a dialogue between movement and its acoustic shadow. At the core lies an artistic question: how does a musician's perception change when their own gestures respond sonically? What new forms of awareness, control, vulnerability emerge when the body becomes a sounding instrument? The research unfolds through performance-based experiments: solo and ensemble improvisations where musicians interact with a system that amplifies their movements. These interactions are designed to explore, from an improvisational standpoint, what new possibilities emerge when movement and sound are placed on the same perceptual and expressive plane. Musicians not only listen to each other's sounds, but they respond to movement as they would to a phrase, and in turn shape and influence the movement itself. Each session becomes a laboratory for examining how embodied listening reshapes interplay, timing and co-creation. The decision to use technology stems from three points: it acts as a perceptual mirror that makes internal micro-gestures audible; it allows a clearer observation of how movement and sound shape one another; and it functions as an active partner that can respond to or transform gesture, adding a subtle layer of otherness to the performance. The presentation includes excerpts from *Movement is Sound* — a suite for drums, electronics and dance — illustrating different configurations of motion, sound and interaction. The project aims not to invent a new musical language, but to reveal one that already exists: the body's own music, where improvisation, technology and corporeality meet, and where playing becomes an act of mutual resonance.

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I'm currently completing my Master's Degree in Jazz Drums at the "G. Verdi" Conservatory in Milan, Italy, following a first-class honors diploma in Rovigo with a thesis on Mel Lewis' big-band style. Alongside institutional studies, I have worked with internationally renowned artists and attended seminars and workshops with musicians such as Peter Erskine, Thomas Fryland, Eric McPherson, Kit Downes. My performance activity includes collaborations with various ensembles and big bands, as well as appearances at major Italian jazz festivals. During my studies, I have increasingly oriented my work toward interdisciplinary research. With a background in Mathematics and Data Science, I investigate the integration of algorithmic analysis and real-time interaction in the performing arts—an approach developed through my research internship at the Centro di Sonologia Computazionale and explored in my thesis on motion-tracking systems for light–sound performance interaction.