

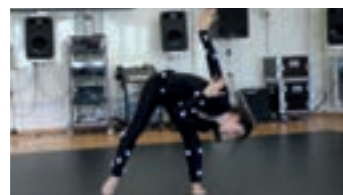
### 1 Bodily and musical expression

- Bodily motion is **physical**
- Musical motion is **metaphoric** (Scruton, 1997)

The instrumental performer's bodily motion combines **playing gestures** and **expressive gestures**. Playing gestures are the essence of technique. However, expressive gestures, i.e. bodily gestures that shape sonic coherence aesthetically, make the sequence of articulated sounds *musical*. The link between playing gestures and expressive gestures, between form and content, obviously exists, but remains elusive: How the shape of a musical gesture, phrase, or larger structure may move or touch the listener is held to remain ultimately private and ineffably subjective (Scruton, 1997).

EGM is an FWF-research project addressing the question:

**Are there intersubjective links between concrete, physical motion and perceived units of changing musical qualities?** In order to investigate the component of motion that is not specific to the instrument, but shapes expression, we designed a virtual instrument without specific playing gestures such as a pianist's technique. Spatial motion itself – without palpable physical resistance – is the "instrument".



Valentina Moar

Alexander Gottfarb

### 2 Turning bodily motion into sonic processes

The real time and "real space" environment of the EGM virtual instrument turns the slightest bodily shiver into sound. Dancers wear suits with flexibly attached reflectors. EGM uses a motion tracking system with 15 infrared cameras to capture spatial coordinates and rotational angles (6 degrees of freedom). The motion data stream feeds into sound-processing-software (*SuperCollider*) accessing excerpts of recorded music or generating synthesised timbral structures and spatialised sounds (Diagram 1). Three aspects of motion become discernible:

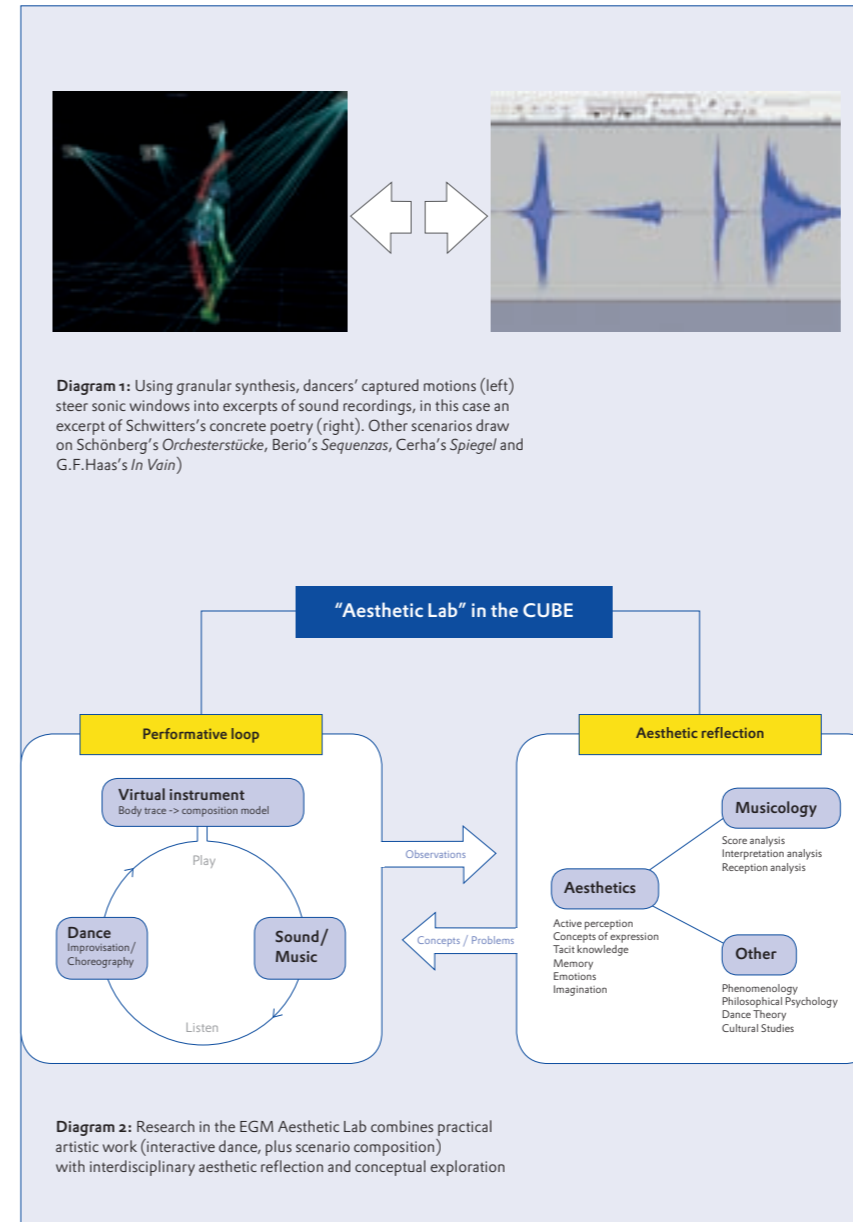
- **Gesture:** trajectory, speed and articulation
- **Posture:** location, orientation, shape
- **Balance:** posture *at the verge of* gesture

### 3 The "Aesthetic Lab" and its ontology

Depending on the performer's level of active and passive engagement in attending to the two media (music and dance), she plays, or becomes, an instrument. The Aesthetic Lab allows for a flexible design and exploration of scenarios that open the traditional borders between composition, interpretation, improvisation, composer, performer and instrument for renewed reflection.

- **Music model:** instrument and composition merge into a spatial topology and interactive structure
- **Performer:** between improvisation (with varying levels of freedom) and choreographic (thus compositional) structures
- **Observer:** proprioceptive involvement (Montero, 2006)

At a certain point, the performer and the performed become one. Emerging from the performative loop (Diagram 2) is the state of **embodied interaction** that can best be described as the performer's feeling as if her body extended into the sound.



#### References:

- Leman, Marc, *Embodied Music Cognition and Mediation Technology* (Cambridge: MIT Press, 2008)
- Levinson, Jerrold, *Contemplating Art* (Oxford: Clarendon Press, 2006)
- Merleau-Ponty, Maurice, *Phenomenology of Perception* (London: Routledge, 1981)
- Montero, Barbara, "Proprioception as an Aesthetic Sense", in: *The Journal of Aesthetics and Art Criticism* 64:2 (Spring 2006)
- Scruton, Roger, *The Aesthetics of Music* (Oxford: Oxford University Press, 1997)

#### Further project information:

- **Team:** Prof. Dr. Gerhard Eckel (Project Leader), Dr. Deniz Peters (Postdoctoral Research), Mag. David Pirrò (Research Assistant)
- **Duration:** 9/2007–3/2010.
- **Funding agency:** Austrian Science Fund (FWF). EGM is the first project by a University of the Arts to have been granted within the *Translational Research Program* (TRP) funding line
- **Dancers/Choreographers:** Anna Nowak (Vienna), Alexander Gottfarb (Vienna), Magdalena Chowaniec (Vienna), Prof. Jianan Qu (Linz), Valentina Moar (Venice)
- **Advisory panel:** Prof. Dr. Andreas Dorschel (Philosophy), Prof. Dr. Barbara Becker (Cultural Studies), Prof. Rose Breuss (Choreography), Trevor Wishart (Computer Music), Ramón González Arroyo (Computer Music), Scott De Lahunta (Interactive Dance), Sally Doughty (Dance Improvisation Theory), Prof. Johannes Birringer (Interactive Performance), Prof. Dr. Florian Dombos (Theory of Science), Daphnis Kokkinos (Dance), Fernando Suels Mendoza (Dance), Dr. Michael Schmidt (Media and Philosophy), Robert Wechsler (Interactive Dance)
- **Website:** embodiedgenerativemusic.org

### 4 Dance in dialogue with music

Via their bodily expertise, dancers become instrumentalists and inter-medial composers. Not only do they move in what Leman (2008) calls "direct involvement"; they *interpret* the given generative computer composition, which is a type of sound installation, instrument, and open work in one.

Part of the challenge is to fit the projection ("mapping") from spatial motion into musical time and parameter space to the body topology, as realms of motion and proprioception link to emotional memory. The character of an intermedial exploration may change dramatically after variation of only a single tracking target's position.

### 5 Findings, and intermedial Case Studies

We argue that actual perception and remembered experience of *bodily sounds of being in the world* merge into a phantom haptic companion to the sound, creating embodiment in the sense of Merleau-Ponty's (1981) phenomenology. Tentative findings:

- Beyond perception and conception, musical motion originates in the *Leib* (phenomenological body)
- *Leib* and musical persona – after Levinson (2006) the abstract agent for personal expression – appear *linked*

Final results of the project are to be presented in audiovisual format as part of the project book (2010). Current examples of intermedial explorations are displayed on the laptop presentation accompanying this poster.