Vrengt: A Shared Body-Machine Instrument for Music-Dance Performance

ÇAĞRI ERDEM, RITMO, UIO
KATJA HENRIKSEN SCHIA, Norwegian Contemporary Dance Company
ALEXANDER REFSUM JENSENIUS, RITMO, UIO

1. PROJECT DESCRIPTION

What if a musician could step outside the familiar instrumental paradigm and adopt a new embodied language for moving through sound with a dancer in true partnership? And what if a dancer's body could coalesce with a musician's skills and intuitively render movements into instrumental actions for active sound-making?

Vrengt is a multi-user instrument, specifically developed for music-dance performance, with a particular focus on exploring the boundaries between standstill vs motion, and silence vs sound. We sought for creating a work for one, hybrid corporeality, in which a dancer and a musician would co-creatively and co-dependently interact with their bodies and a machine. The challenge, then, was how could two performers with distinct embodied skills unite in a continuous entanglement of intentions, senses and experiences to control the same sonic and musical parameters? This was conceptually different than they had done before in the context of interactive dance performances.

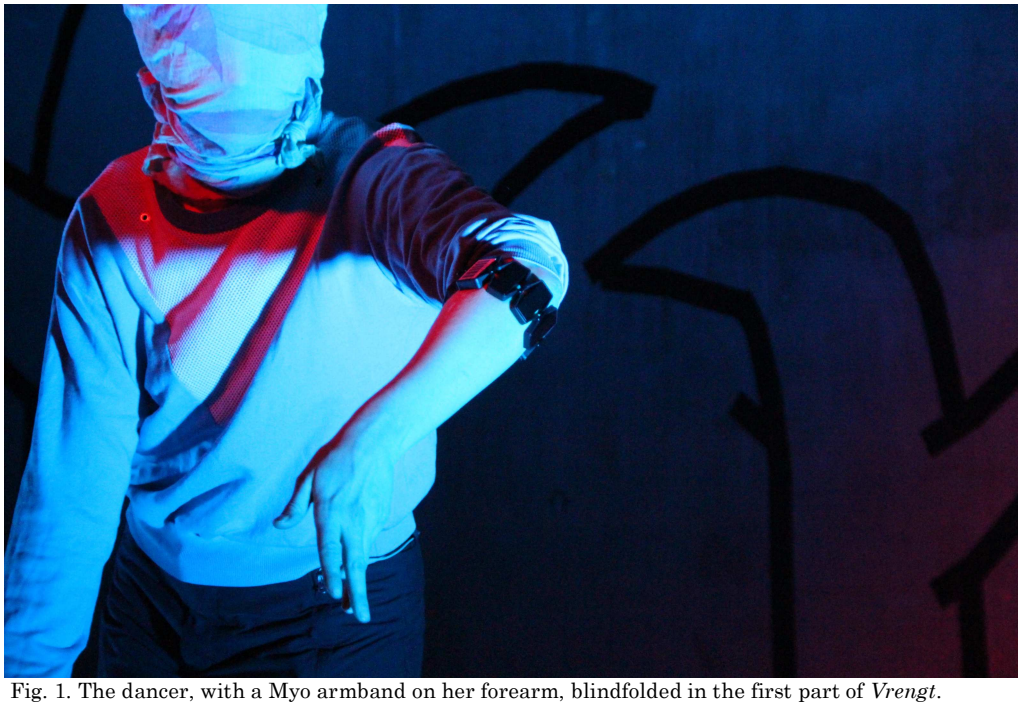

Fig. 1. The dancer, with a Myo armband on her forearm, blindfolded in the first part of *Vrengt*. (Photo: Sophie C. Barth)

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2. TECHNICAL NOTES

Vrengt has been developed through an entirely situated design methodology starting from investigating the dancer's breathing and other involuntary micromotions as variations in muscle activation during standing still. We worked with sonification as an artistic-scientific tool to explore and enhance the bodily data in question. Two Myo gestural control armbands were used for sensing the muscle activity of the left forearm and right leg of the dancer, together with a wireless headset microphone for capturing the breathing in the form of audio signals. The system setup is described in the paper with the same title [1]. In short, the main musical interface is developed in the Max environment. Bioelectric signals are mapped into various sound modules, with a particular emphasis on physically-informed procedural synthesis of everyday sounds. The dancer uses the sound of breathing deliberately to create acoustic feedback loops based on the proximity to the speakers. The main interface for the purpose of shared control is a custom virtual mixer that sums the individual sound modules, allowing the musician to modify the mix levels and data processes with a MIDI controller.

Fig. 2. The dancer, *musicking* with the Myo armband and wireless headset microphone in the third part.

3. PROGRAM NOTES

The composed aspect of *Vrengt* and choreography provides a large amount of freedom in collectively exploring sonic interactions throughout the performance. The piece is structured in three improvisatory parts:

1. Breath: "The embodied sounds of the dancer." Blindfolded, she can rely solely on the kinesthetic and auditory senses. She interacts with the physical space via creating acoustic feedback loops, controlled by the musician.
2. Standstill: "A sonic exploration of the involuntary micromotions." While the dancer forces herself to stand as still as possible, the audience gradually hears the audification of the dancer's neural commands leading to muscle contractions.
3. Musicking: "Playing together!" Both performers join the active process of music-making, presenting the full potential of the shared instrument.

4. MEDIA LINK

- Video: https://youtu.be/hpECGAkaBp0

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[1] C. Erdem, K. H. Schia and A. R. Jensenius. Vrengt: a shared instrument for music-dance performance. In *Proceedings of the International Conference on New Interfaces for Musical Expression,* 2019.

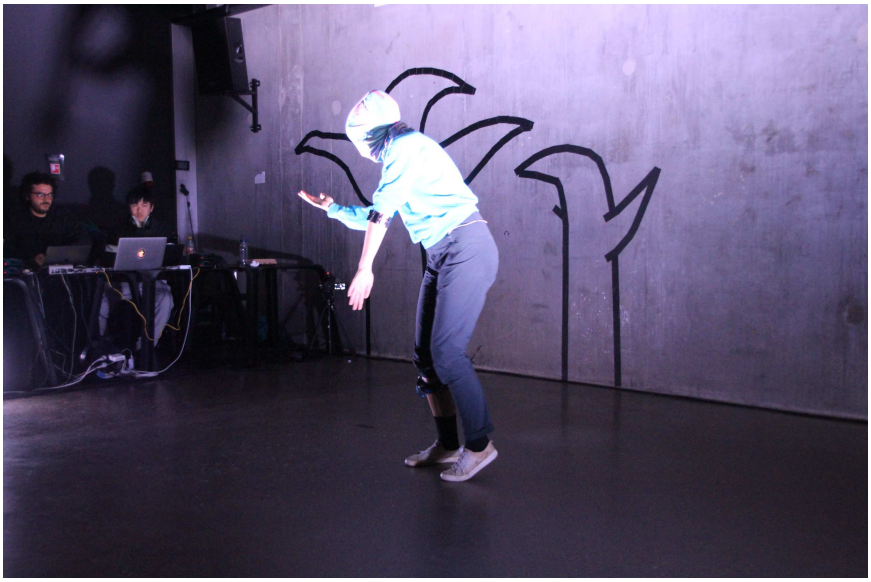

Fig. 3. The dancer, with Myo armbands on her arm and leg, and the musician(s) perform *Vrengt* together in the first live performance.