

Interdisciplinary Panel 4: Looking and listening

Paper Abstract: "Following" movements in interactive dance installations

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During the last five years at IRCAM, we have developed various methods and tools for computer-based gesture analysis, with the general goal to use body movements to interact with sonic and/or visual environments^{1,2}. This research has been largely influenced by sustained collaborations with choreographers and dance companies³, including Myriam Gourfink, Emio Greco | PC and Richard Siegal /the Bakery. This paper will present two recent interactive dance installations we have contributed to.

While designed with different goals and aesthetics (and with different collaborators), they could be considered using a similar interaction principle: the visitor is invited to dance by "imitating" dance material displayed on a large screen. Both installations make use of software elements we developed, among one that is called the "gesture follower".

The first case is the *Double Skin/Double Mind Installation*⁴ that was one of the outputs of a research program on dance notation/documentation first established by the dance company Emio Greco | PC. This work is currently being developed further in a broader interdisciplinary research project, Inside Movement Knowledge⁵, about new methods for the documentation, transmission and preservation of contemporary choreographic and dance knowledge. In the installation, video materials demonstrating different dance elements of a workshop are displayed on a large screen in an intimate space, and the visitor is explicitly invited to dance along with the video. Visual and sound feedback is interactively given to the visitor using a computer based gesture analysis system. The interactive sound and visuals are aimed to increase the awareness of the visitor of different movement qualities and enhance the visitor experience.

The second installation called *If/Then Installed*⁶ was presented at ZKM and Ircam. In this installation the visitor is invited to perform a short dance phrase displayed on a small video. Simultaneously, the visitor can watch on a large screen the dancer's image synchronized to her/his movement. The visitor's attention is thus split into two tasks: performing a dance phrase while watching a video "following" her/his movement. Once completed, the visitor can eventually watch a recording of her/his performance. Perceiving one's motion only after having moved along the dance video generally brings a surprising delayed feedback.

Independently of aesthetics considerations (a discussion that is outside the scope of this paper), these two different installations were successful in bringing a broad range of visitors (most of them non-dancer) moving through following video materials. This presentation will discuss in detail the similarities and differences between these two cases in terms of embodied interaction. These installations both emphasize qualitative elements of kinesthetic empathy and represent an interesting base to speculate on different types of experiments that could be designed to study some aspects of dance related perception processes.

Bibliography

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4. *Double Skin/Double Mind Installation*, first version by C. Ziegler, F. Bevilacqua and B. Bermudez, <http://www.ickamsterdam.nl/index.php?art=278&page=2>
5. *Inside Movement Knowledge*, <http://insidemovementknowledge.net/>
6. *If/Then Installed* by the Bakery: Richard Siegal, Frédéric Bevilacqua, Florent Bérenger, Hillary Goidell and Jean-Philippe Lambert, presented at ZKM and IRCAM see <http://if-then-installed.leprojet.net/>