EMBODIED SOUND INTERACTION
(Live Performance)

Ken Byers
School of Media, Culture and Society. University of the West of Scotland UK. www.uws.ac.uk,
www.interactionalmedia.com

Live performance of body-movement interaction with digital and generated sound. An increasing understanding from various research fields shows that body-movement affects the way we perceive and evaluate ourselves and the environment. Which raises new and challenging questions regarding embodiment, perception and interaction; in digital technological environments, virtual reality (VR), data-live and sound environments. This informs the aesthetic and technical design of embodied interactive audio visuals which is interdisciplinary and useful to digital research and human-computer-interaction (HCI). Full-body-motion tracking of x, y, z, co-ordinates of 22 body parts in the physical performance space; raw, pitch and roll data of all body parts tracked in motion, are utilized in simultaneous-interaction with 3-D motion-graphs and sound.

A theory of embodied interactive audio-visual data-live environments developed from analysis of user experience. Research found users' perception oscillated between proprioceptive and movement-vision, modes of perception and interaction. It was found that for these enhanced modes of perception during interaction, that proprioception was challenged and consciousness transformed. A series of software tools were developed for body-interactive 3-D visuals and analogue synthesizer modulation. The research expands existing knowledge in the fields of human-computer-interaction (HCI): digital media, augmented and virtual realities, embodied interaction, interactive audio-visuals, and new media theory.

artresearch@interactionalmedia.com

Key words: Interactive sound, embodiment, sensory, body-movement perception, body-active perception.

Main References:
[1] Hansen. M. B.N. Bodies in Code: Interfaces with Digital Media. Routledge. (2006)
[2] Rokeby, D Constructing Experience: Interface as Content. http://www.davidrokeby.com/articles.html (1989)
[3] Gallagher, S. (2006) How the Body Shapes the Mind. Oxford. New York.)
[4] Massumi. B Parables for the Virtual: Movement, Affect, Sensation. Duke University Press. Pub Macleod. (2002)