

***Shin'm* (身.音): reshaping the perceived body with sound**

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1 Background

In the following paper, I am going to discuss *Shin'm*, which is a media art project where I create an immersive perceptual experience of bodily transformation of the performer and participants. This interdisciplinary project is a hybrid artwork using interactive video, spatial sound, wearable installation and performance. *Shin'm* is the expansion and evolution of several art projects that have explored the seamless integration between art and innovative techniques. The techniques include: ambisonic spatial sound, ultrasonic directional sound projection, wearable technology, video projection, motion detection, interactive visualization and Butoh dance imagery techniques.

In the relatively short history of interdisciplinary art¹ using digital media, media artists have struggled to create high quality hybridizations. Overcoming the rough tangling of experimental practices is a great challenge. Within this project, I propose that *Shin'm* suggests a new level of interdisciplinary art that finely weaves together all the elements necessary to construct this project: forms, techniques, space and participants. In the following description, I will highlight projects leading up to *Shin'm*, the main concepts and its vision.

First, I will briefly describe my four recent projects that have directly influenced *Shin'm*:

¹ It is used as a general term describing an artwork applying and integrating multiple disciplines. I reserve this discussion about the definition of interdisciplinary, transdisciplinary, multidisciplinary and hybrid art at this point.

1.1. *SeoNang* (Figure 1)

*SeoNang*² is an international telematic project between Seattle (USA) and Seoul (Korea). It consists of two interactive interfaces changing its sound and visualization in response to the participant's movement. Participants meet in the virtual space and collectively change the shape of the virtual membrane (space between two virtual presences).

1.2. *Entanglement* (Figure 2)

*Entanglement*³ is a telematic sound installation interacting with participants in the sound space that is constructed by three-dimensional sound techniques. Directional sound technology draws a fragile acoustic line in the middle of a room. The room is completely dark. The audience perceives the space through their aural experience, which is designed with spatial sound technology. The participant's body disturbs the acoustic line and when the line is broken the particles spread into the sound space. The participants' bodies reshape the sound space interactively, changing the form.

1.3. *Metamorphosis* (Figure 3)

*Metamorphosis*⁴ is a site-specific video installation with ambisonic sound and powder screen (consisting of sugar and salt) on the floor. The video body on the powder screen in the centre transforms into sound, spinning around the space that embraces the audience.

1.4. *PuPaa* (Figure 4)

*PuPaa*⁵ is a multimedia performance inspired by Butoh. Dancers wear various technologies embedded in costumes which I consider an outer layer of their body, and integrate themselves as well as the audience. Incorporeal connections of the images and sounds along with the corporeal presence of the dancers and digital devices, create a collective body - as if they are living in obligatory symbiosis.

² In collaboration with Wesley Smith, Rama Hoetzlien and Graham Wakefield, 2005

³ In collaboration with Juan Pampin and Joel S Kollin, 2008

⁴ 2008

⁵ In collaboration with Diana Garcia-Snyder, Bo Choi, Donald Craig and dancer collaborators, 2008

Figure 1⁶Figure 2⁷Figure 3⁸Figure 4⁹

2 Concepts

2.1. Body and sound

Shin'm has two layered meanings in Korean. As a word *Shin-um* means moaning and groaning, which I believe to be natural and un-manipulated sounds directly from the body, like sounds of growth. *Shin* as an individual word means the body and *Um* means sound. *Shin'm* thus expresses its multi-layered concept; it is a hybridization of body, technology, and space towards the posthuman.

2.2. Body metamorphosis and posthuman

As our body is extended with new media technologies, it transforms into a kind of posthuman: a convergence of the biological body, mechanical augmentations, and vast networks. Since the late '60's, performance has rapidly engaged with video and media art. Nam Jun Paik's *TV Bra for Living Sculpture* depicts a body presented through the hybrid language of performance, music, and two TVs attached to the

⁶ *SeoNang*: two participants in Seattle and Seoul are visualized in the virtual space. They move their body and change the shape of membrane between them.

⁷ *Entanglement*: Once the participants' eyes are adjusted to the darkness, they see two hole-like structures indicating each ends of the acoustic line in the room.

⁸ *Metamorphosis*: the human-like body in the video projection is becoming a spiral shape mass in transition to sound.

⁹ *PuPaa*: the dancer embedding a video projector is moving to the center of the stage at the beginning of PuPaa.

body. In the 1990's, fake body parts sometimes replaced the human body, as seen in Matthew Barney and Cindy Sherman's works. Recently, several media artists has posed a cyborg or posthuman body; Lynn Hersmann and Stelarc have attempted to extend their own bodies into cyberspace using robotics, biology, and computer science technologies. These works, while seminal, are limited in the extent to which the audience can experience a posthuman transformation in the first person perspective. There are also numerous interactive visuals on screens following human movements and shapes. However, they are generally not executed in an artistic context. *Shin'm* proposes an artwork illuminating our posthuman body, and at the same time, offers the audience participation, with its immersive design and its unique use of sound that draws and transforms body shapes.



Figure 5. Concept images of the dancer's body extension in the space

3 Project Vision

Hybridization and transformation can be found in every part and process of this project. *Shin'm* begins as a dance performance. A dancer, in the centre of the room, wears augmented sleeves. These sleeves track movements and generate dynamic sound. Here the sound represents her body's shape. As she moves her limbs, her sound travels through the space as if her body has been stretched in that direction. Her sound-body continually stretches and changes its shape as she dances. Eventually, a web-like trace of her sound-body remains. After this performance, *Shin'm* transforms into an interactive installation. The audience appreciates this performance and also it's sound-afterimage which the dancer left in the room. The audience can then alter their identity into that of a participant. The sleeves installed in the centre of the room remain hanging in the space - suspended from the ceiling. A participant wears the sleeves and experiences body metamorphosis, as the dancer

did. Their participation reshapes the sound-afterimage and it accumulates over the period of the exhibition. Here once more, their identity transforms into that of a collaborator, collectively creating an accumulated sound-body trace by the end of the show.

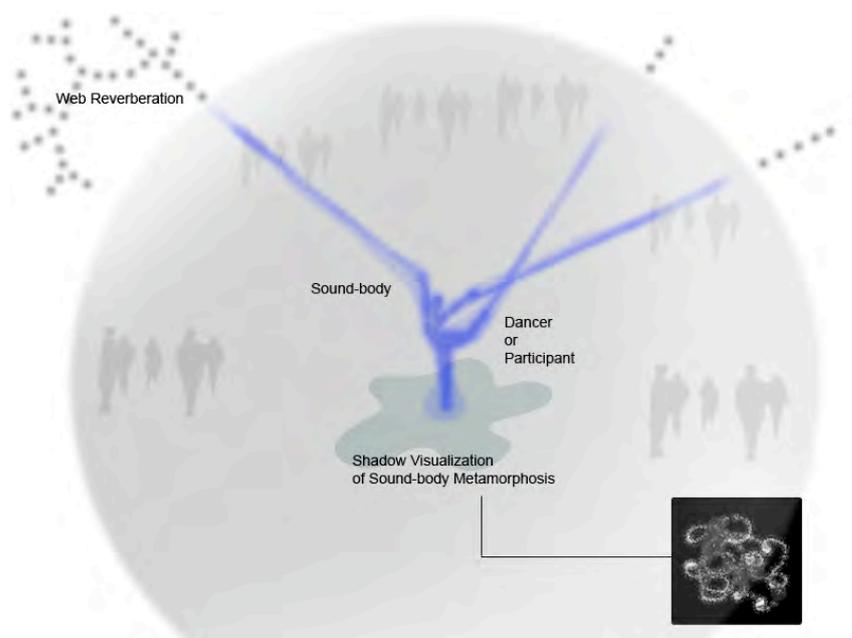


Figure 6. The performer's sound-body traveling through the space. The audience surrounds the performer. The image at the right bottom box shows a test run of motion detection visualization.

4 Technologies and installation scheme

One of the most original and innovative techniques in *Shin'm* is the directional sound projection apparatus. The Ultrasound Research Group in DXARTS, including myself has been developing its base technique. This technique allows the creation of any desired size of speaker to project a highly directional sound beam. The other advanced sound technique is ambisonics, which creates sound movement anywhere in three-dimensional space. In *Shin'm*, these two technologies are integrated to create a perceptually convincing sound movement. The sound moves from the dancer's body to the edge of the space through the audience. The wearable design of the sound apparatus enhances the illusion of the sound-body and allows for anyone to experience an active role in shaping the sound-body. Simultaneously, interactive visuals using computational languages project a 'shadow' of the sound-body on the floor.

The choreography draws on Butoh¹⁰ dance techniques, such as transformations through internal and external states. As my future research, this body extension will reach out over the walls and travel through the web using telematic technologies. In the telematic version, when the sound-body returns to the room 'web reverberations' of the sound supplements the sound-afterimage in the room.

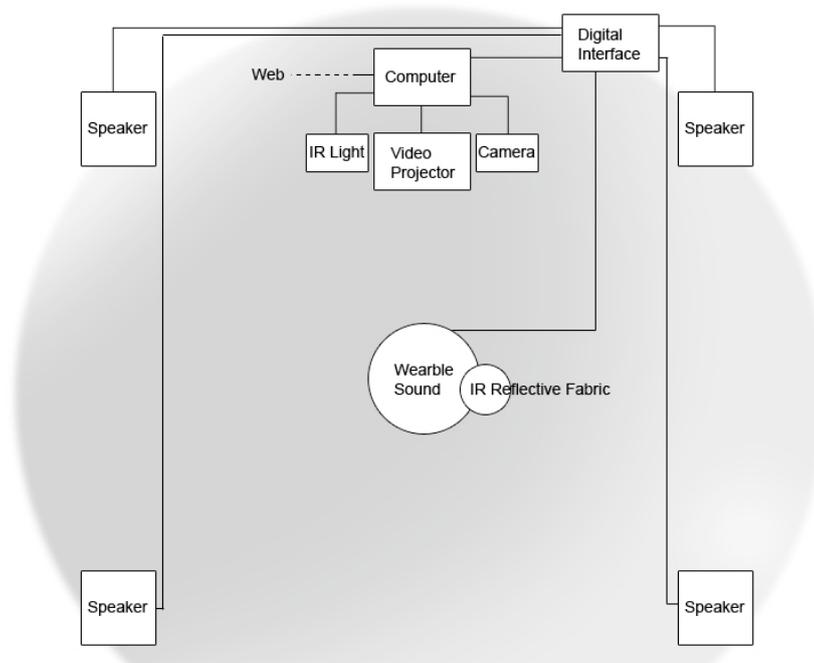


Figure 7. Installation Scheme 1

5 Final Notes

Shin'm is an ongoing project. Its complexity develops through iterations. For the first iteration, I will emphasize visual interaction using camera vision detection and the first model of sleeves, which is a physical interface for audiovisual interaction (July 2009). The primary element of this project is spatial sound that gives the illusion of limb extension. This part has been developed and will be elaborated to achieve an aural experience where the participant is immersed. Through several exhibitions in 2009 and early 2010, I aim to complete the first alpha version of *Shin'm* without the web reverberation element. In the final form, *Shin'm* will generate a perceptual embodiment of posthuman body extending our limbs over its biological limitation and transfusing into the web.

¹⁰ Specifically speaking, it is *Butoh Ritual Mexicano* that my performer collaborator Diana Garcia-Snyder contributes.