



Title: *Metamorphosis*

Designer Name and Institution: Jooyoung Shin, Cornell University

Keywords: Dress-body relationship, transformability, 3D printing technology, sustainability

Design Statement

Metamorphosis is one of the creative outcomes of a research project that aims to examine the physical and conceptual relationship between dress and body in various socio-cultural contexts and ultimately to define the ways in which dress is established based on different concepts/perceptions of body in terms of meaning and form. *Metamorphosis* is part of a forthcoming solo exhibition of my designs resulting from this research.

Sociologists have defined the body as an imperative component for human activity and have argued that it is constrained by the society in which it is situated (Helman, 1992; Shilling, 1993; Elias 1991). Entwistle (2004) introduced the concept of “the dressed body” which recognized both body and dress as socio-cultural embodiments and phenomena. It is natural to think that perspectives toward the body have been determined in a particular socio-cultural context and only accepted within that context. Eastern and Western cultures had established substantial disparity in their understanding of the body. The Western body is a substantialized form consisting of body parts, organs, muscles and skeletal structure and separated from the outside world, whereas the Eastern body sits at the interface where the inner and external world meet (Zito, n.d.). Consequently, each culture, with such different perspectives toward the body, has constructed a distinct dress-body relationship. In the West, the dress and body are interrelated and integrated. Hollander (1993; 85) who reads the body shape in close relation to the clothes argued that western dress is a “visual arrangement” created by a combination of body shape and clothing shape. Dress physically framed the body and reflected the perpetual changes of ideal body shapes that occurred in the western costume history. On the contrary, the Eastern dress and body displayed an independent relationship, since neither form is dictated by each other. The body became invisible within the clothing (Hay, n.d.) and there is no physical resemblance found between dress and body.

Inspired by the distinct ‘dress-body relationship’ established in the Eastern and Western cultures, this design project aimed to develop innovative design principles in order to represent the visual dynamics of deconstructing the fixed boundaries between dress and body. The first and foremost design principle of *Metamorphosis* was to introduce ambiguous boundaries by means of allowing a continuous transformation between 3-dimensional body-conforming and 2-dimensional body-defying silhouettes of the garment. This transformability was achieved by employing 3-D printing technology (Stratasys Fortus 400 Fused Deposition Modeling technology with ABS-M30 Thermoplastic). Hexagons and triangles with varying numbers of hinges were printed and joined together to form the shoulder straps and the back of the upper garment with 3-D printed pins. The main design focus of the 3-D printed part of this garment was to allow flexibility for the contour of the garment back to be manipulated into body-fitting or flat modes after assembly. The geometric patterns of the 3-D printed pieces were taken from the motifs commonly used for the Korean traditional roof decoration called *dancheong*. Another design principle was application of sustainable design method: minimizing fabric waste by using the full width of textiles and cutting patterns in squares and shaping them to fit the body by means of pleating

and gathering. Because of the weaving technique and unique selection of yarns, this particular wool tweed fabric has intrinsically beautiful fringed edges. To keep it as it was (i.e., to utilize it as a design element), the fabric was simply cut in the desired length and attached to the 3-D printed triangles designed with 4 small holes on one side for the purposes of joining. The high-waisted wide pants consist of two layers; a white coated linen over-layer made of 4 rectangle pieces and 1 gusset and black mesh inner-layer made of 3 rectangle pieces, which can be seen through the side openings of the white over-layer. Lastly, the designs of the 3-D printed tweed top demonstrate how a symmetrical balance can be achieved within asymmetry.

This design project resulted from an innovative approach to realizing different dress-body relationships established in the Eastern and Western cultures and demonstrated how new technology can be applied to broaden the spectrum of creativity and feasibility through the design process.

References

- Elias, N. (1991). *The Symbol Theory*. London: Sage.
- Entwistle, J. The Dressed Body. In: L. Welters & A. Lillethun. ed. 2007. *The Fashion Leader*. Berg.
- Hay, J. n.d. The Body Invisible in Chinese Art? In: A. Zito and T.E. Barlow, ed. 1994. *Body, Subject and Power in China*. Chicago: The University of Chicago Press.
- Helman, C. (1992). *The Body of Frankenstein's Monster: Essays in Myth and Medicine*. New York: Norton.
- Hollander, A. (1993). *Seeing Through Clothes*. Berkeley: University of California Press.
- Shilling, C. (2012). *The Body and Social Theory*. Los Angeles: Sage.
- Zito, A. n.d. Silk and Skin: Significant Boundaries. In: A. Zito and T.E. Barlow, ed. 1994. *Body, Subject and Power in China*. Chicago: The University of Chicago Press.

