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PRELIMINARY STEPS TOWARD A KINETIC TOOL FOR THE DESIGN AND VALIDATION OF APPAREL PATTERNS

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ABSTRACT

This poster brief addresses the significance of creating a new dress form paradigm (i.e. a kinetic tool) that instigates apparel pattern design to shift from body's static consideration into a dynamic one. A transdiciplinary approach is needed to embody this goal. Herein, we describe the preliminary steps of this project research and the process to fulfill it.

Keywords: body's biomechanical behavior, simulation, mediation

MOTIVATIONS AND GOALS

After investigating clothing's cut, we become aware that traditional pattern design lays on a paradox since foundation patterns and dress forms represent the body standing still even though this entity is elastic (Simões 2005). The resultant patterns amount to a series of upright projections, which must adapt to the inconsistency of body's shape due to movement.

Our motivation to generate a kinetic tool to support the design and validation of apparel patterns doesn't mean that we devalue the results achieved through customary methods; it emerges from our aim to help pattern designers to perceive the body as a deformable being at all stages of their work.

In addition to the distortion of body's soft and rigid tissues happening with breathing, walking/sitting, donning/doffing and other basic activities, when clothes come into contact with the body they may also

affect its shape and mobility. The information assessment of this project is, consequently, framed by human/product physical interaction concerns.

The creation of a kinetic tool that replicates body's biomechanical behavior depends on a theoretical basis, which is supplied by the disciplines of Ergonomics, Neurophysiology and Biomechanics (among others).

Questionnaires and ethnographic surveys will be conducted to a Portuguese fashion brand's consumer to award the computation of the range of motion, shape distortion and volume change occurring at the joints, muscles, and skin. Anthropometric data included in pattern design tables will be, thus, supported.

The selection of mechanisms and materials for this model's structure/filling/lining regards their resilient properties so as to match, in an interactive mode, the behavior of bones, muscles and skin.

The configuration of this model includes placing a grid on its skin, which by subdividing the body into zones acts as mediation between the deformable body and pattern design (Watkins 1995).

In contrast with pattern design's traditional methods, this model's tangible nature will lead to an approach that can begin one-step forward: body shape's inconsistency is reflected within the patterns outline. Thus, clothes evaluation according to pressure distribution and enhancement of mobility will be unproblematic. Accordingly, by embracing a new body representation paradigm clothes will feel as good on an active body as they look on a motionless one.

Another contribution that will arise from this industry-academia research project relates to the long-termed aspiration of generic apparel manufacturers: to reduce the time and cost implicated in clothing development.

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