

## Draping and Pattern Design Innovation: Spirals in X and Y

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### Introduction

The fashion industry is constantly seeking innovation in design because of its systemic cycle where new, exclusive products are commonly adapted for popular taste levels and large-scale diffusion, rendering those styles no longer desirable, and requiring the introduction of new styles to begin the cycle again (Ruppert-Stroescu & Hawley, 2014). Because fashion apparel products consist of materials encasing the body, creativity in fashion apparel design can be cultivated through exploration of new materials and through development of new pattern engineering techniques. The purpose of this study was to cultivate creativity in pattern engineering to foster ideas that are not only new and innovative but that eventually can be adapted to fit a range of taste levels and price points, contributing to the fashion industry cycle. To accomplish this goal, the researcher examined the work of innovative apparel designers, established criteria for fabric manipulation and developed a garment in half scale.

### Method

The work of three early 20<sup>th</sup> Century designers who used non-conventional methods for pattern development was studied: Vionnet, Fabrègue, and Döering. Vionnet's methods have been extensively examined (Bryant, 1993; Martinez-Yu, 2013). Fabrègue and Döering were Vionnet contemporaries who lived and worked in France as well, however much less is known of their techniques. The researcher characterized the method of each designer in terms of seams, darts, volume, grain and technique. For example, Vionnet avoided traditional placement of darts and seam lines by employing geometric shapes and the dynamics of fabric bias (Bryant, 1993; Martinez-Yu, 2013). Fabrègue's method reflected freedom of movement and the body shape where the fabric was draped in one or two pieces and spiraled around the body horizontally, much like an orange peel. Döering's method was similar to Fabrègue, where the pattern was in one or two pieces, but the fabric moved vertically from front to back, or vice-versa. The researcher combined elements of the three methods, spiraling fabric around both the x and y axis, maintaining one pattern piece, avoiding traditional shaping, and engineering with bias.

Draping began at the center back hip of the French size 38 half-scale dress form with an attached arm for three reasons: 1) the hip would be the widest part, 2) to maintain straight of grain for the majority of the time so that the bias would serve to shape when needed, and 3) to begin a spiral movement. The muslin was smoothed around the base of the hip (Figure 1). Directing the cross grain up the y axis at the center front, the muslin was shaped around the neckline. Continuing from the neck to the back caused the muslin to fall on the bias at the center

back, where a downward facing arrow was added to create visual interest (Figure 1). Shifting from the y axis to the x axis at the waist involved raising the fabric back on grain and forming a dart. Smoothing the muslin horizontally around the high hip induced bias grain again, and the crosswise grain was brought parallel to the floor by forming darts (Figure 2). A total of five darts were shaped in this manner until reaching the front princess/waist level. The fifth dart was engineered to result in grain bias for shaping around the bust mound. The muslin continued on the y axis over the bust and shoulder to the back, then in a spiral under and around the arm. Traditional marking, truing, and muslin transfer methods were used to render the paper pattern (Figure 3), strategically placing numbered notches for garment assembly.

### Results, Conclusions, and Future Study

Mindfully approaching the draping process to focus on spiral movement of the muslin around the body, shifting from the x to y axis and back, resulted in a garment that complements the shape of the body through non-traditional shaping methods (Figure 2). The single pattern piece, ten darts and two seams render the garment easy to assemble (Figure 3). The jacket gives the appearance of a complex, sophisticated garment (Figure 4). Future study will adapt this pattern to appeal to large-scale diffusion by separating parts into simpler garments, such as a dress, a skirt, or a blouse. This research demonstrates how examining the work of apparel design innovators leads to establishing a set of design criteria, fostering meaningful innovation that is useful for professionals who participate in apparel design for the fashion system.



Figure 1: Back

Figure 2: Side

Figure 3: Pattern

Figure 4: Jacket

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