

Balanced Beauty

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Balanced Beauty, resulted from a study of Roman and Greek mythologies and the designer's attempt to depict balance and structure within an individual's life. Life is often filled with ventures that can lead to a sense of unbalance. This neck piece with matching wrist cuffs personifies concepts of restraint motivated by a need to maintain order.

In the Western world, the discipline of astrology began as way to predict weather, seasons, illness, and misfortunes (Campion, 2009). Over time, people believed that the position of the sun, moon, and planets predetermined specific personality traits and fortune based upon one's moment of birth (Kwak, Jaju, & Zinkhan, 2014). The Roman goddess of love Venus, is also often associated with her astrological sign of Libra. Pictorially, Libra is illustrated by both the scales symbol and the hieroglyphic crescent and bars. Both symbols have been well known to signify balance, equilibrium, order, and justice (Woolfolk, 2001). According to Woolfolk, (2001), the symbol of the scales developed from an ancient Egyptian symbol, Akhet, in reference to the setting of the sun. While the familiar zodiac sign includes the crescent shaped glyph positioned over a bar. *Balanced Beauty* transforms these symbols into a fashionable statement accessory that reflects harmony and equilibrium.

Throughout history, body adornments such as head pieces and jewelry have been to used indicates one's status and authority (Tortora & Marcketti, 2015). *Balanced Beauty* is a piece of jewelry designed to reflect the silhouette of the scales; capitalizing on shape, balance, and color. The geometric shapes within this piece create an intricate asymmetrical design. Triangles are often used to symbolize the mind, body, and soul and the harmony between them in varying cultures (Dzelzkalns, 2016). The shapes and sizes of each triangle were varied to portray the beauty of imperfection and the unity that brings each shape together. Capturing the essence of the sun, this piece was painted gold to symbolize a Libra's wisdom, power, and need for self-indulgence and luxury (Woolfolk, 2001).

The design process for *Balanced Beauty* began with mood board development followed by sketches of potential silhouettes and symbols. Expanding upon the trend of neck embellishments, the designer molded the piece into an armor to signify conflict along with inner strength. Life often involves conflicts of power, and status; the cuffs and collar represent strength and power while the chain offers confinement and/or restraint in an effort to maintain balance and harmony. The designer utilized a body scan achieved via the use of a Human Solutions VITUS XXL/Smart 3D Body Scanner in order to obtain the model's precise measurements. The body scan was imported into Rhinoceros 3D modeling software and used as a base geometry to create the silhouette of the neck piece and cuffs. The use of a 3D body scan allowed for accurate scaling

and fit. Once the basic silhouette was achieved, additional embellishments such as geometric shapes and spikes were added onto the design, along with small holes to link the pieces together. Multiple prototypes were printed and evaluated throughout the design process. The piece was then finalized in Rhinoceros, and printed on a Makerbot Z18 3D printer, using polylactic acid (PLA) filament a biodegradable polymer.

Once each piece was cleaned, the neck piece and cuffs were linked together by gold chains. The chains were draped equally apart from one another when each arm is raised in a balanced position, reflecting the shape of a scale. Each chain was loosely attached to the adornments to show different ways that the scales can fall dependent on the model's movement. Suede laces serve as closure devices for the neck and wrist pieces.

3D printing (3DP) has had a significant influence on the fashion industry and the way we interpret design. The combination of 3DP and hand embellishments has allowed for a more diverse design process and cultural references (Thurston & Mamp, 2015). Retailers and industry professionals have been able to improve their product designs through the creation of customizable products for their consumers using 3DP (Vanderploeg, Lee, & Mamp, 2016). As this technology continues to expand and be adopted, it will become important to understand how it can be used in fashion product development. This work is therefore significant as it explores the use of 3D printing for custom accessory design, as well as, the use of 3D body scanning as a tool in the modeling process. Using body scans as base geometry allows for the development of pieces that not only are aesthetically appealing but also demonstrate appropriate function and fit.

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